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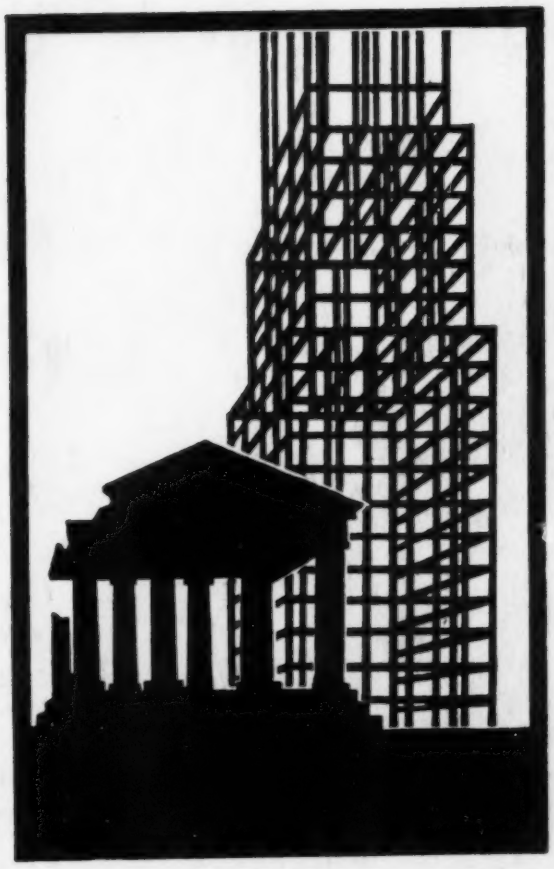
THE ARCHITECTURAL RECORD



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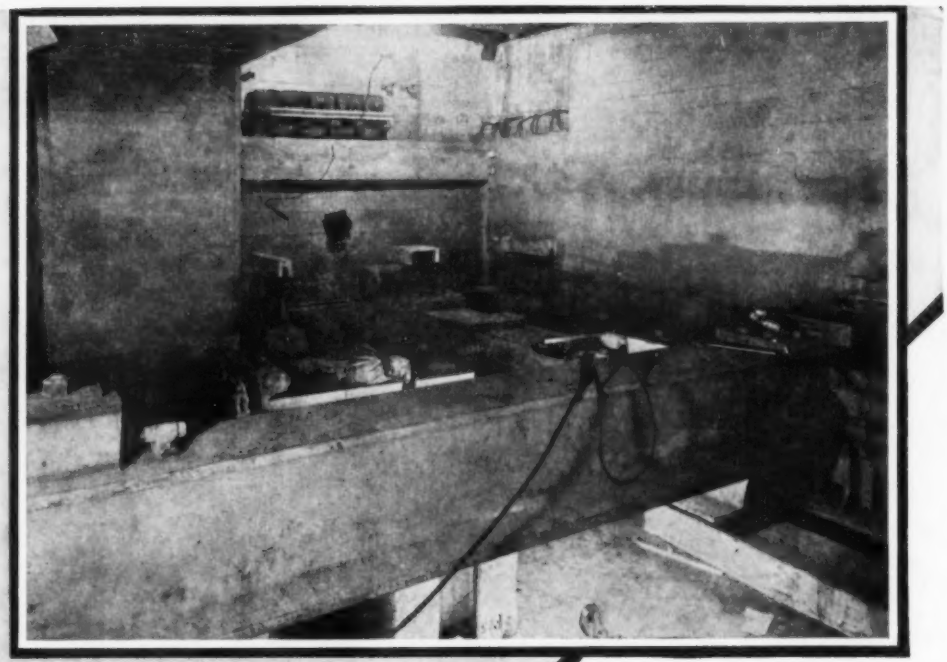

High Early-Strength Watertight Concrete

New scale pit, made according to Universal Atlas tested methods, at the Proctor, Minn., station on the D. M. & N. R. R. E. H. Dresser, chief engineer; Peppard and Fulton Co., Superior, Wis., contractor.

Plain Facts

3-Day, Watertight Concrete Made According to Universal Atlas Methods

Used by D. M. & N. R. R. for New Scale Pit

A watertight, high-early-strength scale pit, the concrete for which was mixed and placed according to Universal Atlas tested methods, has been completed at Proctor, Minn., by the Duluth, Missabe & Northern Railroad. High-early-strength concrete was used to reduce the time the station would be without scale facilities. As the pit is located in low ground, watertight concrete was as important as quick use.

Cylinders made and cured under field conditions were tested in a commercial laboratory. Average of tests showed a compressive strength at 3 days of 3430 lb. per sq. in.; this strength is greater than the 28-day strength of concrete as commonly mixed and placed. The saving in time on this work was thus more than 3 weeks.

Methods for obtaining high-early-strength, watertight concrete with the standard portland cement of the Universal Atlas company (the same as furnished for ordinary concrete work) will be sent on request. Just use the coupon.

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Without obligation, please send me methods for securing high-early-strength, watertight concrete with the standard portland cement of the Universal Atlas company.

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A MID-TOWN BANKING BRANCH
for the Title Guarantee and Trust Co.,
New York City

JOHN MEAD HOWELLS, ARCHITECT

A MID-TOWN BANKING BRANCH

TITLE GUARANTEE AND TRUST CO., NEW YORK CITY

JOHN MEAD HOWELLS, ARCHITECT

THE ARCHITECTURAL RECORD

AN ILLUSTRATED MONTHLY MAGAZINE OF
ARCHITECTURE & THE ALLIED
ARTS & CRAFTS

VOLUME 67 JUNE · 1930 NUMBER 6

A MID-TOWN BANKING BRANCH

for the Title Guarantee and Trust Company, New York City

JOHN MEAD HOWELLS, ARCHITECT

THE BUILDING

A twenty-story office building of light brick with stone trim.

•

THE ENTRANCE

The appearance of weight, which frequently dominates entire bank facades, has here been confined to the entrance, which is framed in black Swedish granite. (See page 504). The officers of the bank work behind spacious windows.

•

THE BANKING ROOM: PLAN

Although the public space in the banking room is in the center of the building (see plan on page 502) yet the narrow lot necessitates that the elevator lobby occupy one side. To give the illusion of greater width, the architect has carried the bank screen motif around this side wall suggesting a space behind it (see page 502), and he has also placed mirrors in the partition above the tellers' cages.

•

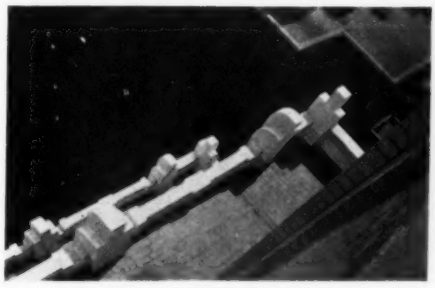
LIGHTING

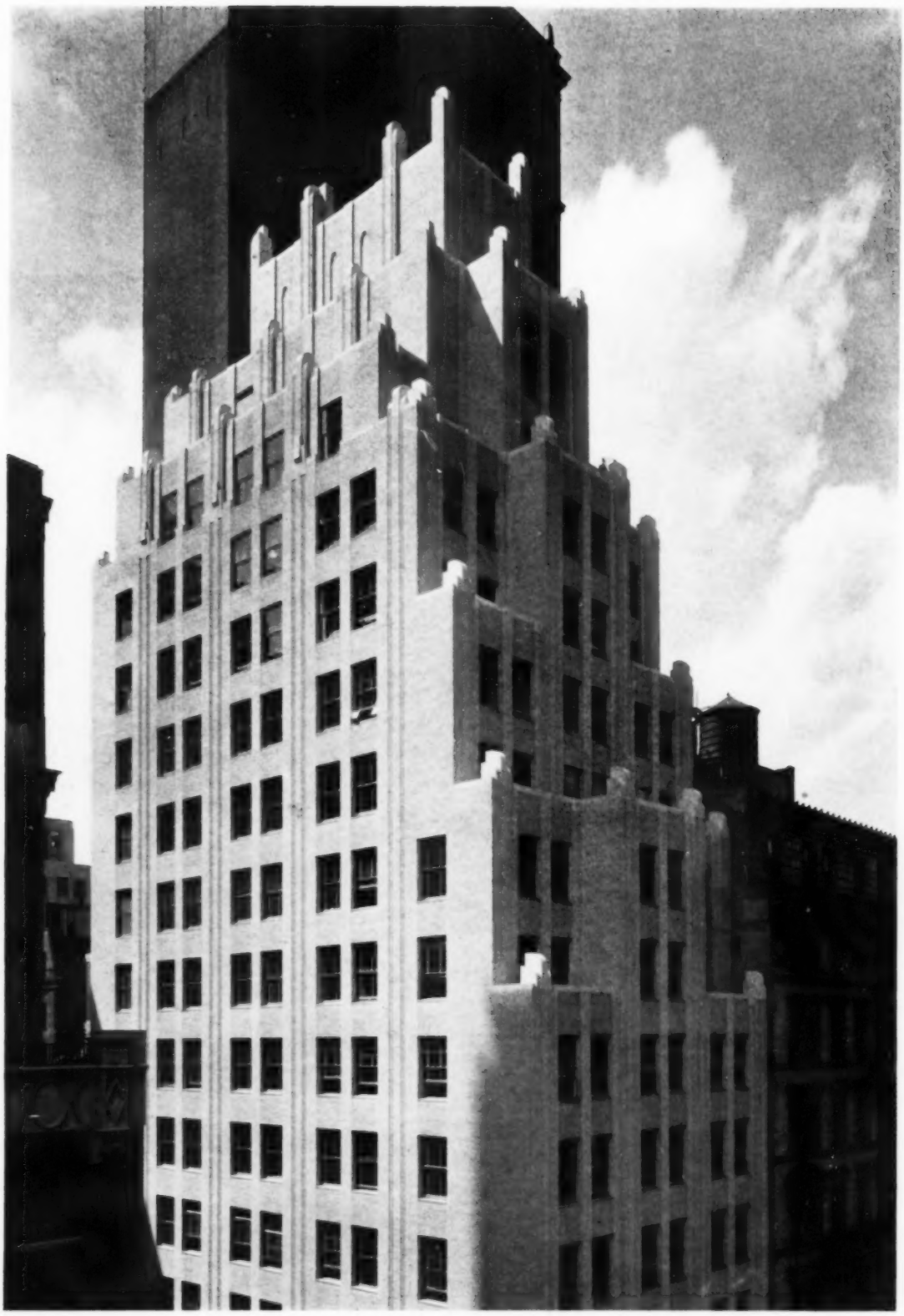
This banking room is lighted entirely by indirect light, reflected from the ceiling, which is covered with Dutch metal leaf of a silver appearance. The long lighting fixtures are hung close to the ceiling and reflect directly against it.

•

MATERIALS

The ceiling of rough plaster covered with metal leaf; the bank screen of chrome-plated bronze with simple vertical fluting in Benedict metal (which is slightly yellow, and relieves the silver whiteness of the screen). Lower part of wall in marble without mouldings or carving.





A MID-TOWN BANKING BRANCH

TITLE GUARANTEE AND TRUST CO., NEW YORK CITY

JOHN MEAD HOWELLS, ARCHITECT

STREET FRONT, A MID-TOWN BANKING BRANCH

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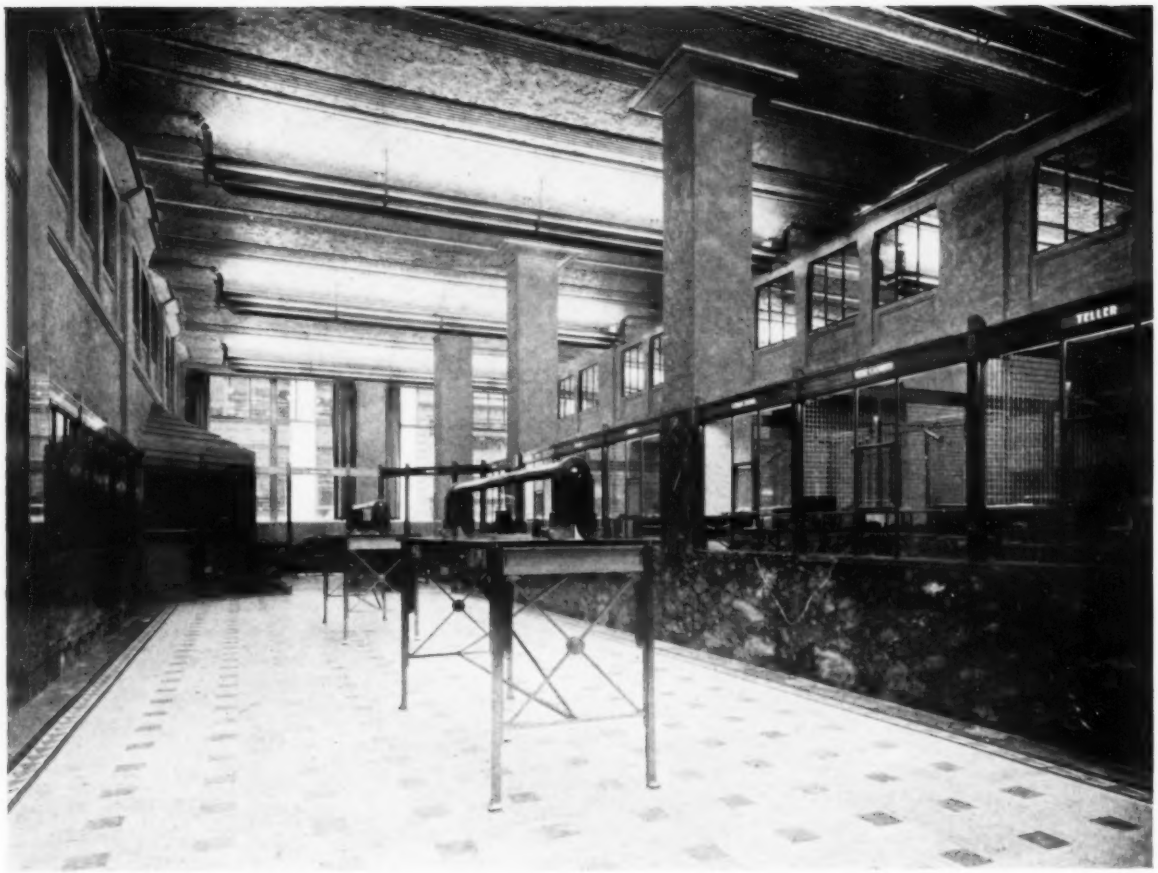
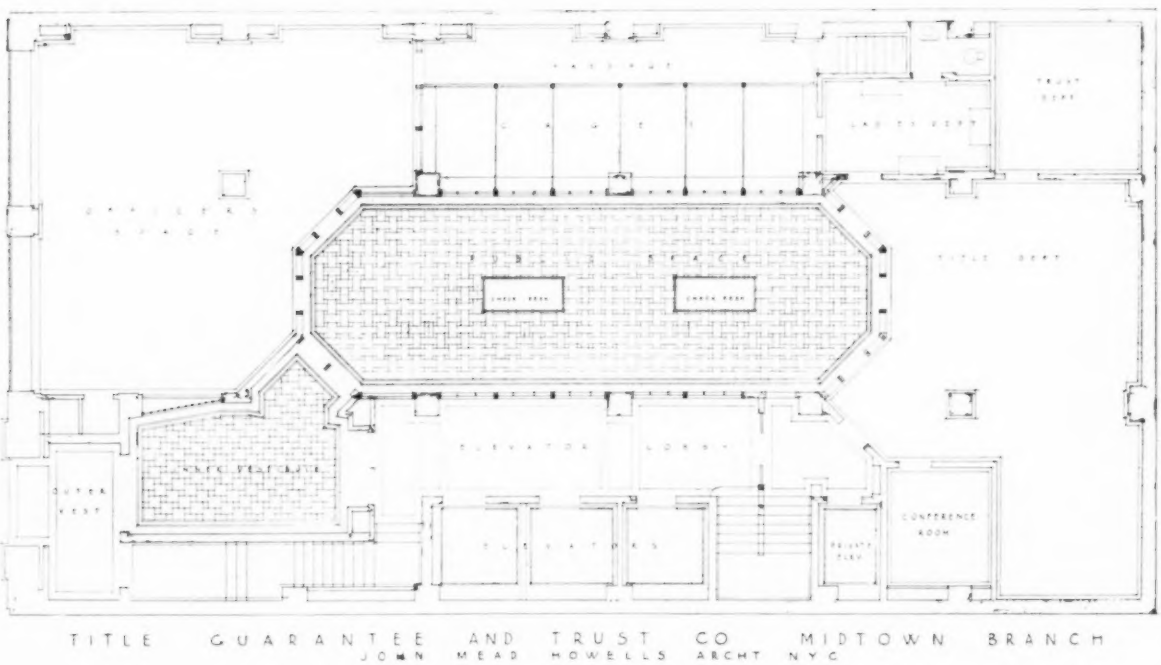
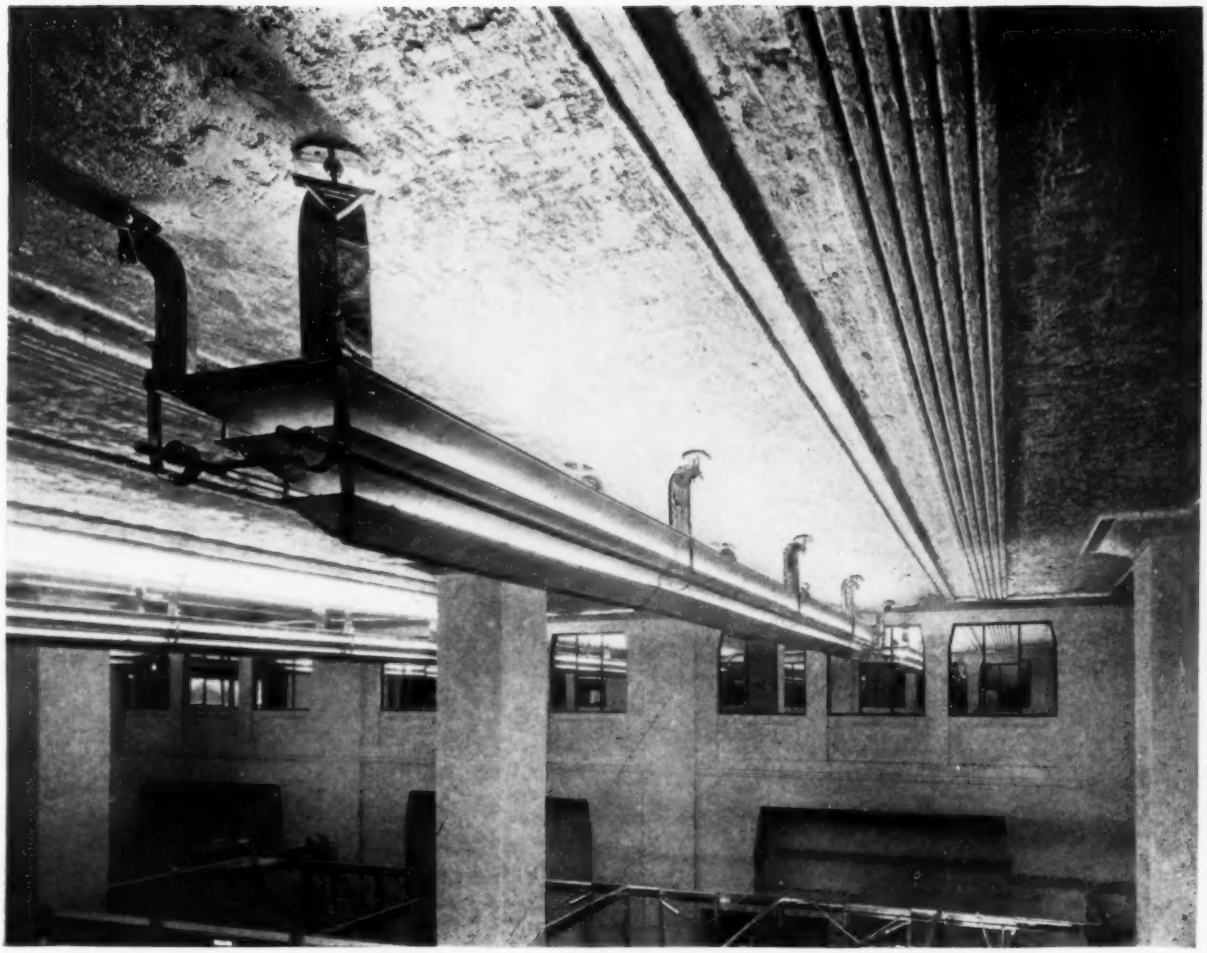




INTERIOR, A MID-TOWN BANKING BRANCH

TITLE GUARANTEE AND TRUST CO., NEW YORK CITY

JOHN MEAD HOWELLS, ARCHITECT



A MID-TOWN BANKING BRANCH

TITLE GUARANTEE AND TRUST CO., NEW YORK CITY

JOHN MEAD HOWELLS, ARCHITECT

This view shows the long lights hung close to the ceiling. The mirrors on the wall give the effect of a continuation. The room is narrow and the architect felt the need of suggesting added space.

ENTRANCE, A MID-TOWN BANKING BRANCH
TITLE GUARANTEE AND TRUST CO., NEW YORK CITY
JOHN MEAD HOWELLS, ARCHITECT

THE RICHFIELD BUILDING, LOS ANGELES

MORGAN, WALLS AND CLEMENTS, ARCHITECTS

PLAN FEATURES

Located on the corner of Sixth and Flower Streets, this building takes account of increasing city traffic congestion by the inclusion of a large garage covering two entire floors of basement space, where tenants may park their cars and take an elevator directly to their offices.

A large part of this building is to be occupied by the executive and general offices of the Richfield Oil Company.

On the twelfth floor is a large amusement room provided with a stage; adjacent to it a fully equipped restaurant kitchen and cafeteria making possible daily service to all employes. On this floor also are private dining rooms for business luncheons and the executive suites on the floor below are served by means of a dumb-waiter to a pantry and luncheon or dining room. The twelfth floor includes barber shops, lavatories, a ladies' lounge room.

•

BEACON AND FLOODLIGHTING

A beacon tower about 130 feet high carries a searchlight for guiding airplanes. The entire building is floodlighted at night.

•

EXTERIOR TREATMENT

The walls are black to prevent undue contrast with countless windows which might destroy the mass or silhouette. The terra cotta wall surfaces are broken by countless shallow vertical flutes or ribs 1½ inches wide, to catch highlights. The gold ornamentation is of terra cotta coated with a layer of finely pulverized gold, held in suspension in a transparent glazing solution.

•

SPANDRELS

The verticality of line of the building is accented by keeping all floor spandrels back of the general wall surface, thus producing the effect of single, vertically slotted, windows running from the second to the twelfth floor. Immediately behind the glass panes of the windows at the floor lines, metal and thin concrete backing permit this feature without sacrificing floor space.

•

SCULPTURE

By Mr. Haig Patigian, all in one way or another symbolizing motive power.

•

INTERIOR

The vestibule is in Belgian black marble, with trimmings in Cardiff green, and metal work in Russian bronze. The elevator doors of etched metal run from floor to ceiling.

•

MODELS

After the general design had been determined, a ⅛-inch scale model was made; by photography it was pictured on the site in true relation to existing structures around it. These composite photographs, taken from several points of view, made possible a study from many angles.

Photo. Keystone

GRILL IN MAIN ENTRANCE

THE RICHFIELD OIL BUILDING, LOS ANGELES

MORGAN, WALLS AND CLEMENTS, ARCHITECTS

CORRIDOR ON ONE OF THE UPPER FLOORS

RICHFIELD OIL BUILDING, LOS ANGELES

MORGAN, WALLS AND CLEMENTS, ARCHITECTS

Photo, Keystone

STAIR DOOR IN MAIN LOBBY

RICHFIELD OIL BUILDING, LOS ANGELES

MORGAN, WALLS AND CLEMENTS, ARCHITECTS

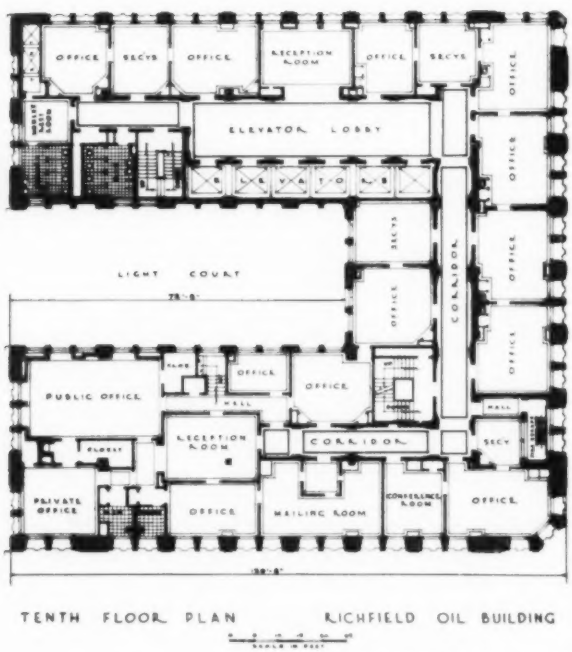
Photo, Bruce

TERRA COTTA FIGURES AT FIRST SET-BACK

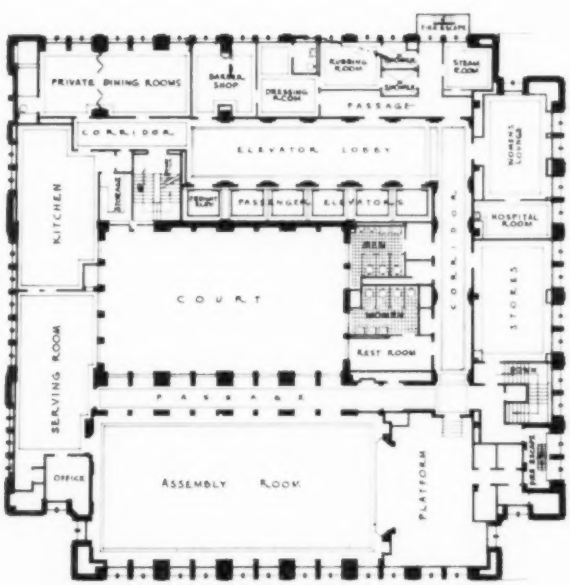
RICHFIELD OIL BUILDING, LOS ANGELES

MORGAN, WALLS AND CLEMENTS, ARCHITECTS

PRIVATE OFFICE



TENTH FLOOR PLAN RICHFIELD OIL BUILDING



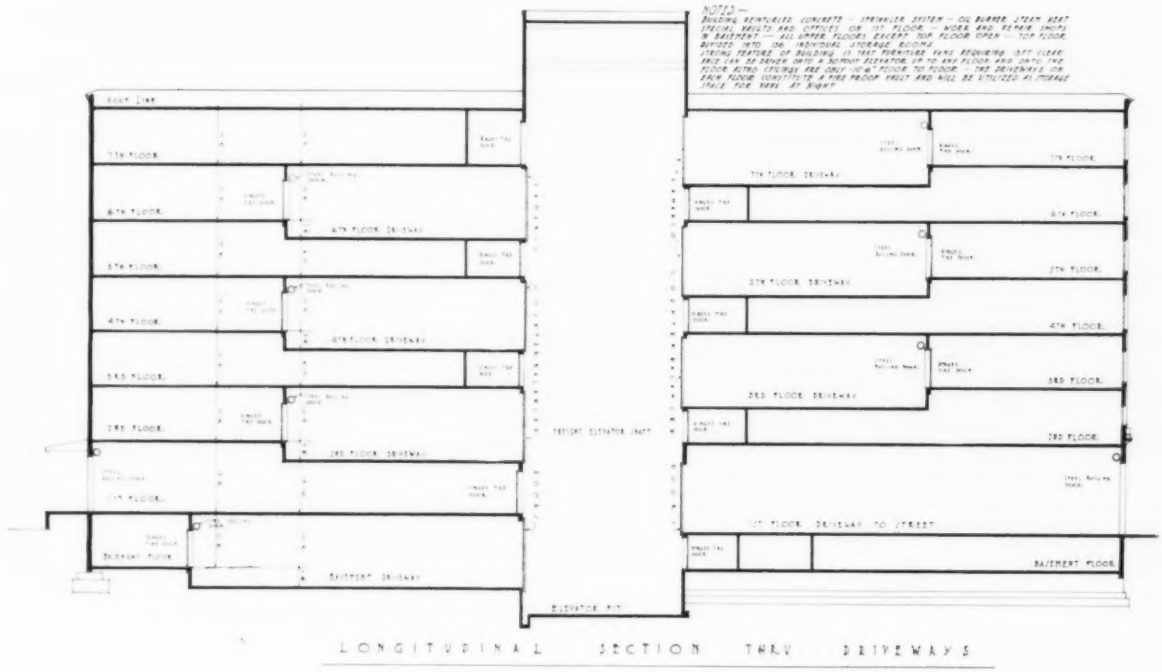
TWELFTH FLOOR PLAN - RICHFIELD OIL BUILDING

RICHFIELD OIL BUILDING, LOS ANGELES

MORGAN, WALLS AND CLEMENTS, ARCHITECTS

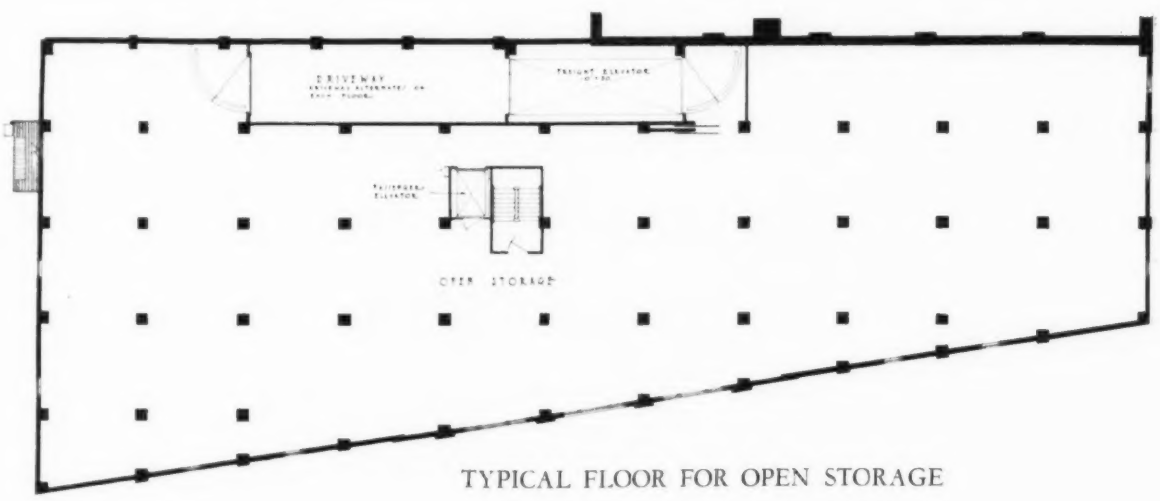
THE "SECURITY" STORAGE WAREHOUSE, PORTLAND, ORE.

C. A. HOUGHTALING, ARCHITECT

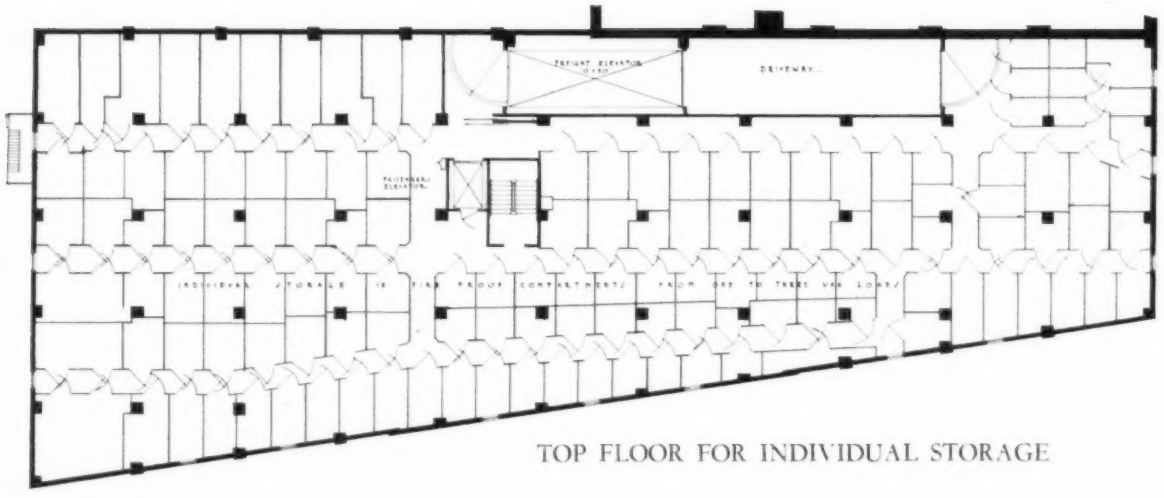


LONGITUDINAL SECTION THRU DRIVEWAYS

The section printed above shows the remarkable feature of this building, which is the system whereby big vans are unloaded on the upper floors. Driveways of 13-foot clearance are built into every story, although the building itself is only 10 feet 6 inches high from floor to floor. A 30-foot elevator unloads the vans on these driveways, which are built as fireproof vaults to store the vans overnight.



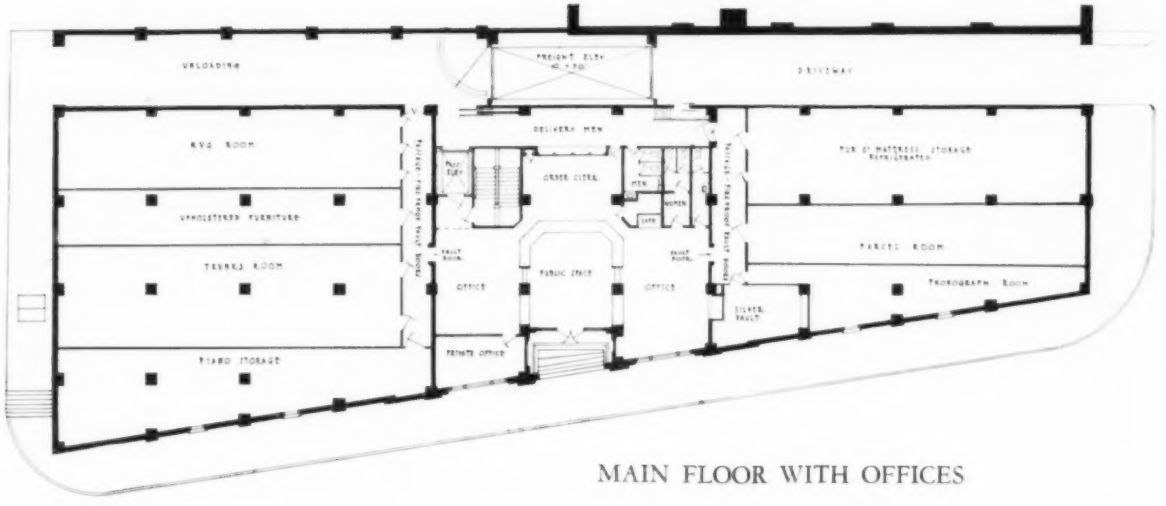
TYPICAL FLOOR FOR OPEN STORAGE



TOP FLOOR FOR INDIVIDUAL STORAGE

The top floor (shown above) is divided into 136 individual storage rooms; all the other upper floors are open, as shown on the plan above. Special vaults and offices are on the first floor; work and repair shops in the basement.

The building is of reinforced concrete; it is equipped with oil burners, steam heat, and a sprinkler system. It is 7 stories high, with dimensions of 200′ by 50′ at one end and 80′ at the other.



MAIN FLOOR WITH OFFICES

PORTFOLIO OF CURRENT ARCHITECTURE

Photo Wallace

HOUSE OF ELLIS AMES BALLARD AT CHESTNUT HILL, PA.
THOMAS, MARTIN AND KIRKPATRICK, ARCHITECTS

FEATURING FOUR HOUSES

Photo Wallace

HOUSE OF ELLIS AMES BALLARD AT CHESTNUT HILL, PA.

THOMAS, MARTIN AND KIRKPATRICK, ARCHITECTS

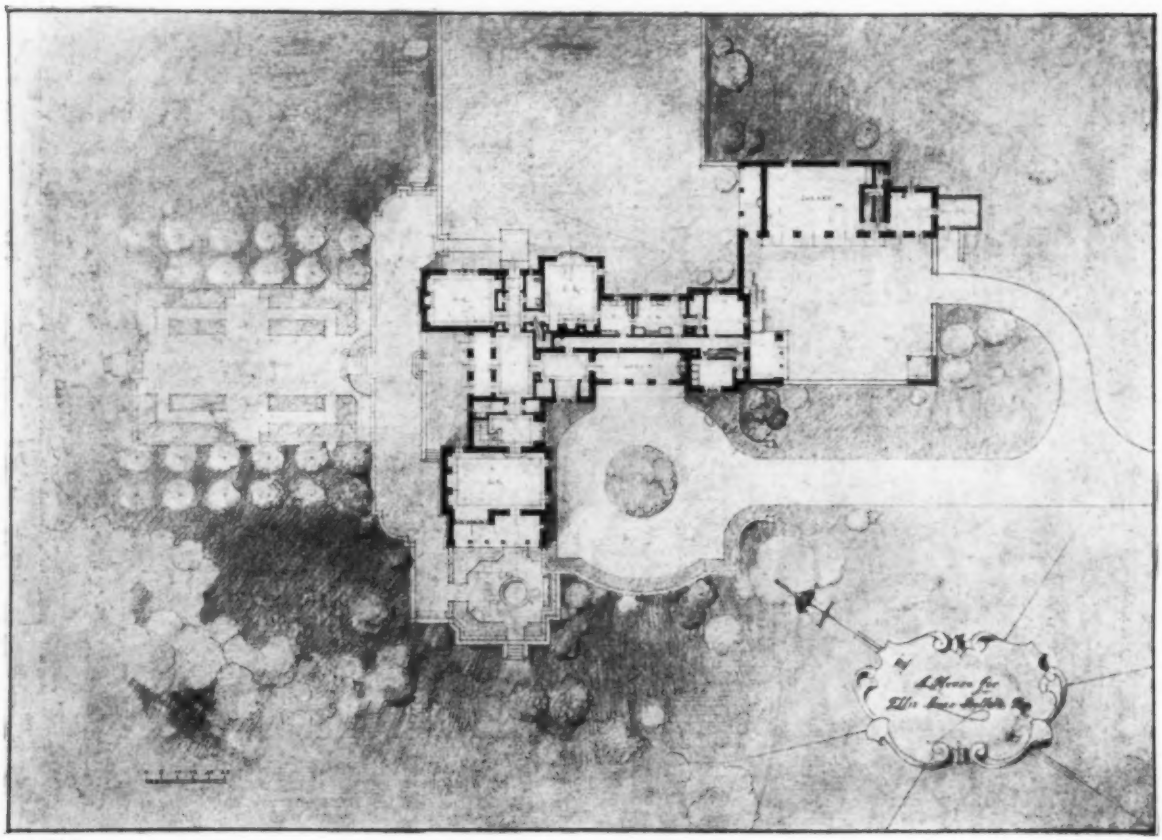


Photo. Wallace

HOUSE OF ELLIS AMES BALLARD AT CHESTNUT HILL, PA.

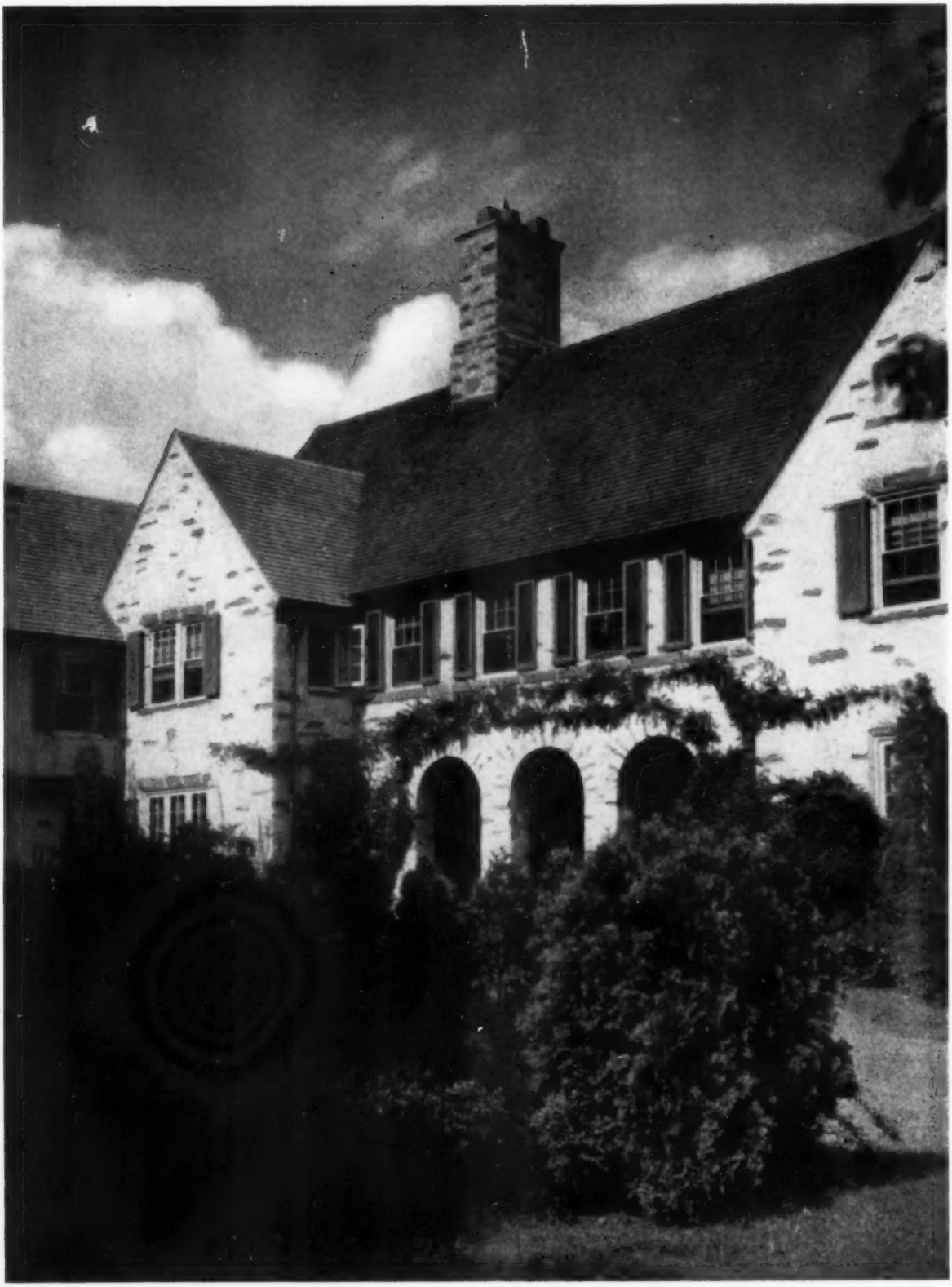
THOMAS, MARTIN AND KIRKPATRICK, ARCHITECTS

Photo. Wallace

SERVICE WING

HOUSE OF ELLIS AMES BALLARD AT CHESTNUT HILL, PA.

THOMAS, MARTIN AND KIRKPATRICK, ARCHITECTS



Photo, Wallace

LOGGIA

HOUSE OF ELLIS AMES BALLARD AT CHESTNUT HILL, PA.

THOMAS, MARTIN AND KIRKPATRICK, ARCHITECTS

Photo. Wallace

LIVING ROOM PORCH

HOUSE OF ELLIS AMES BALLARD AT CHESTNUT HILL, PA.

THOMAS, MARTIN AND KIRKPATRICK, ARCHITECTS

Photo. Wallace

LIBRARY

HOUSE OF ELLIS AMES BALLARD AT CHESTNUT HILL, PA.

THOMAS, MARTIN AND KIRKPATRICK, ARCHITECTS

Photo. Kammerdiener

ENTRANCE

√ HOUSE OF ROLLIN C. CHAPIN, ARCHITECT, MINNEAPOLIS, MINN.

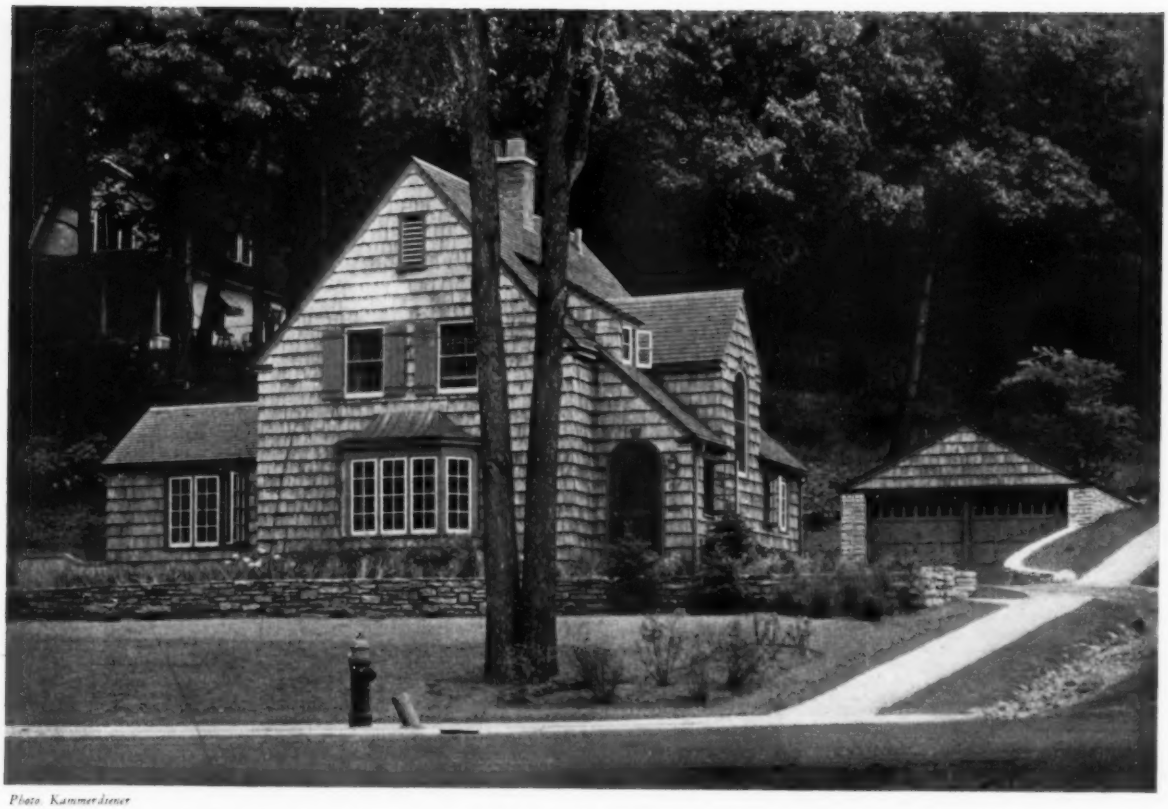


Photo. Kammerdiener

HOUSE OF ROLLIN C. CHAPIN, ARCHITECT, MINNEAPOLIS, MINN.

Photo. Kammerdiener

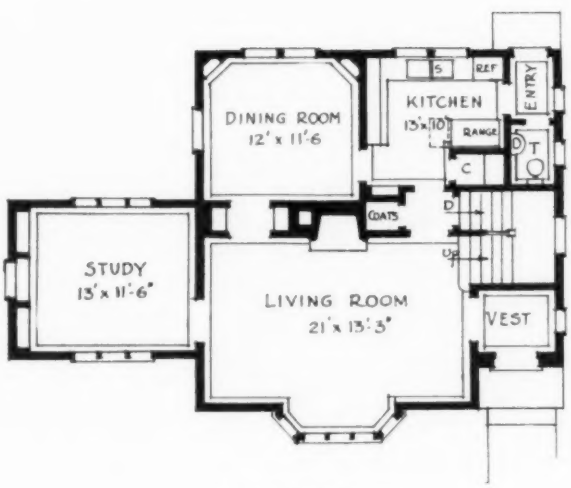
THE STUDY

HOUSE OF ROLLIN C. CHAPIN, ARCHITECT, MINNEAPOLIS, MINN.

Photo. Kammerdiener

KITCHEN

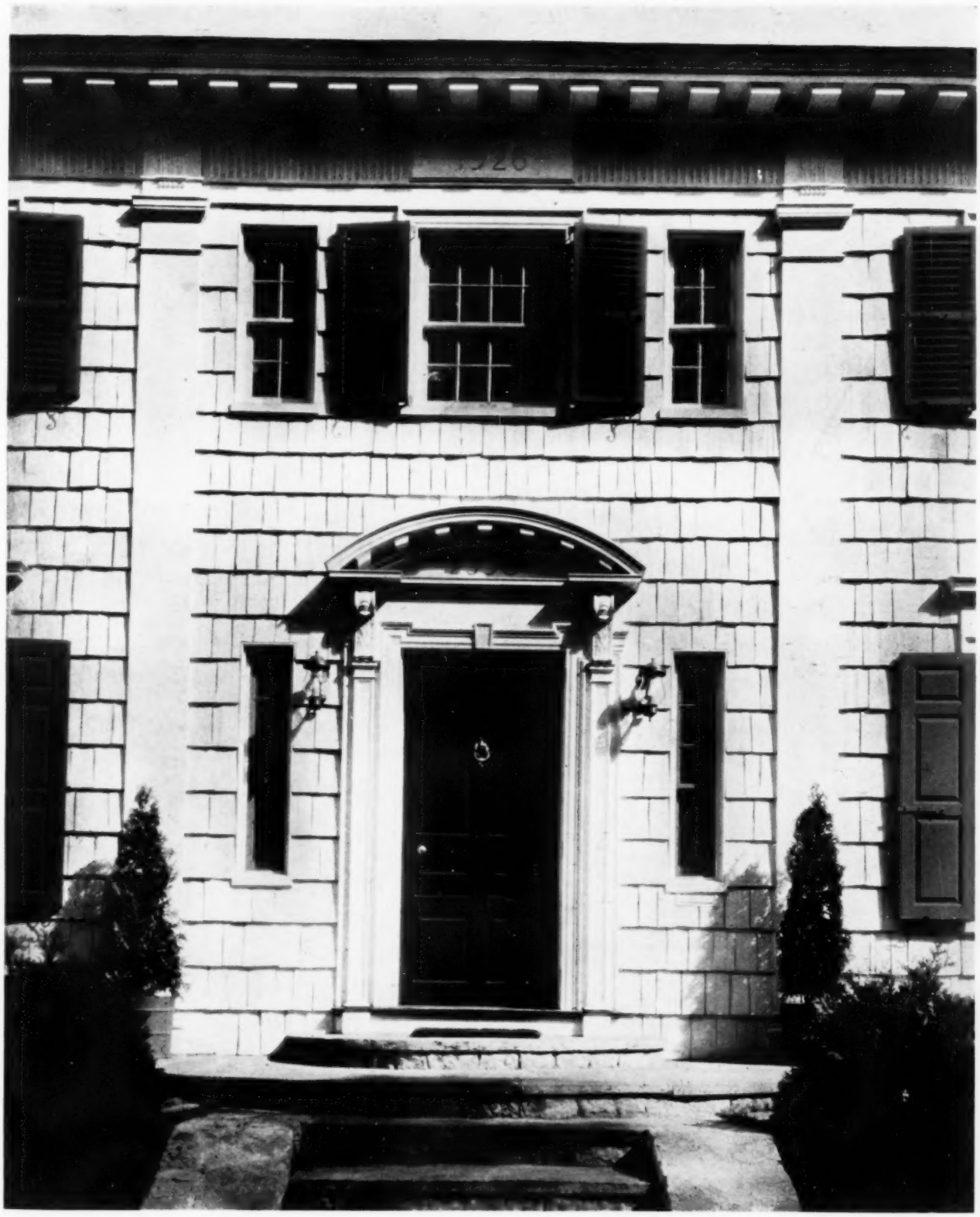
HOUSE OF ROLLIN C. CHAPIN, ARCHITECT, MINNEAPOLIS, MINN.



FIRST FLOOR PLAN

SECOND FLOOR PLAN

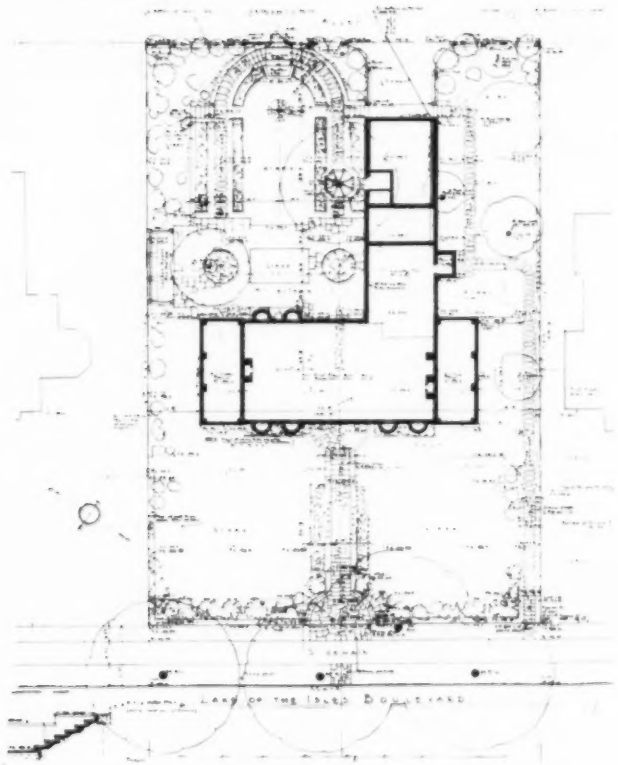
HOUSE OF MR. AND MRS. ALLYN K. FORD, MINNEAPOLIS, MINN.
CLARENCE WILSON BRAZER, ARCHITECT



MAIN ENTRANCE

HOUSE OF MR. AND MRS. ALLYN K. FORD, MINNEAPOLIS, MINN.

CLARENCE WILSON BRAZER, ARCHITECT



PLOT PLAN

GARDEN

HOUSE OF MR. AND MRS. ALLYN K. FORD,
MINNEAPOLIS, MINN.

CLARENCE WILSON BRAZER, ARCHITECT

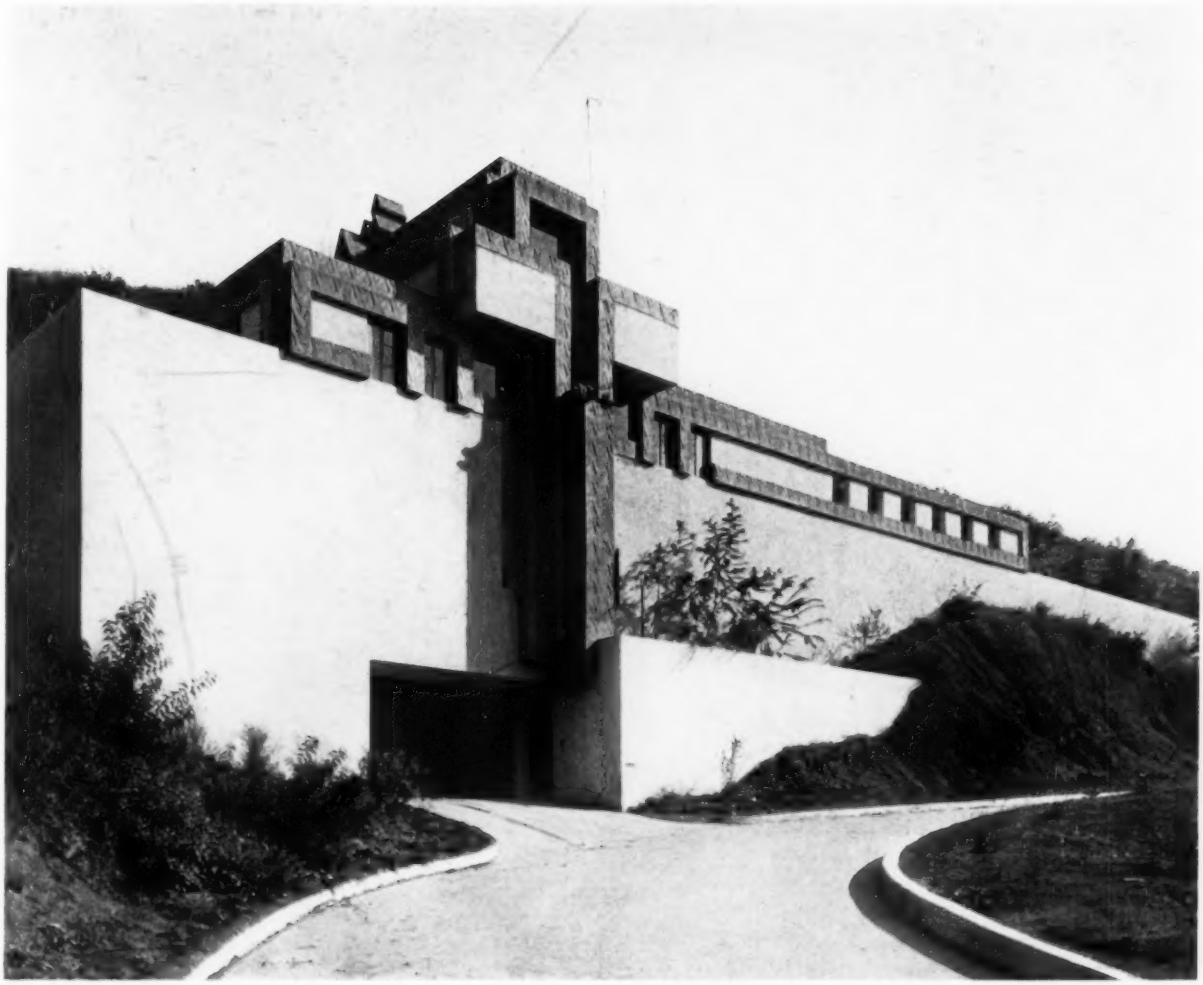
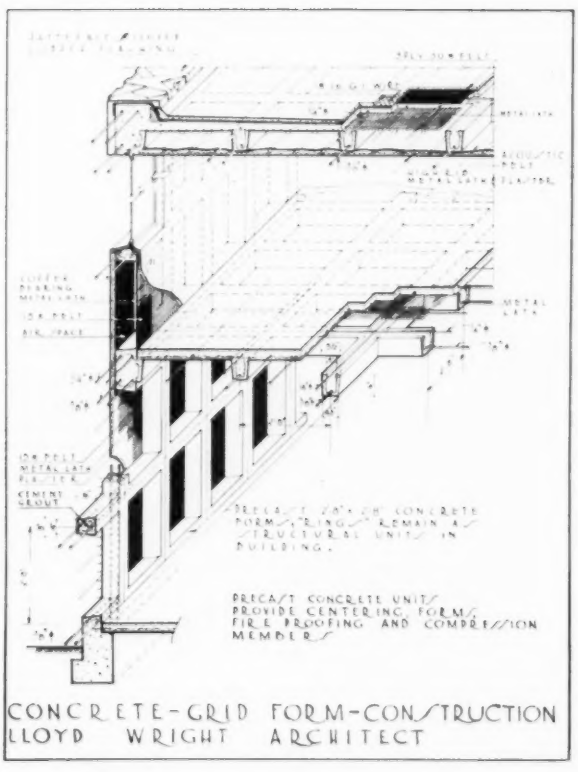


Photo Connell

HOUSE OF LOUIS SAMUEL,
LOS ANGELES, CAL.

LLOYD WRIGHT, ARCHITECT

"One of the lightest of all reinforced concrete buildings for the purpose ever designed and built."
(See text on page 530.)



CONCRETE-GRID FORM-CONSTRUCTION
LLOYD WRIGHT ARCHITECT

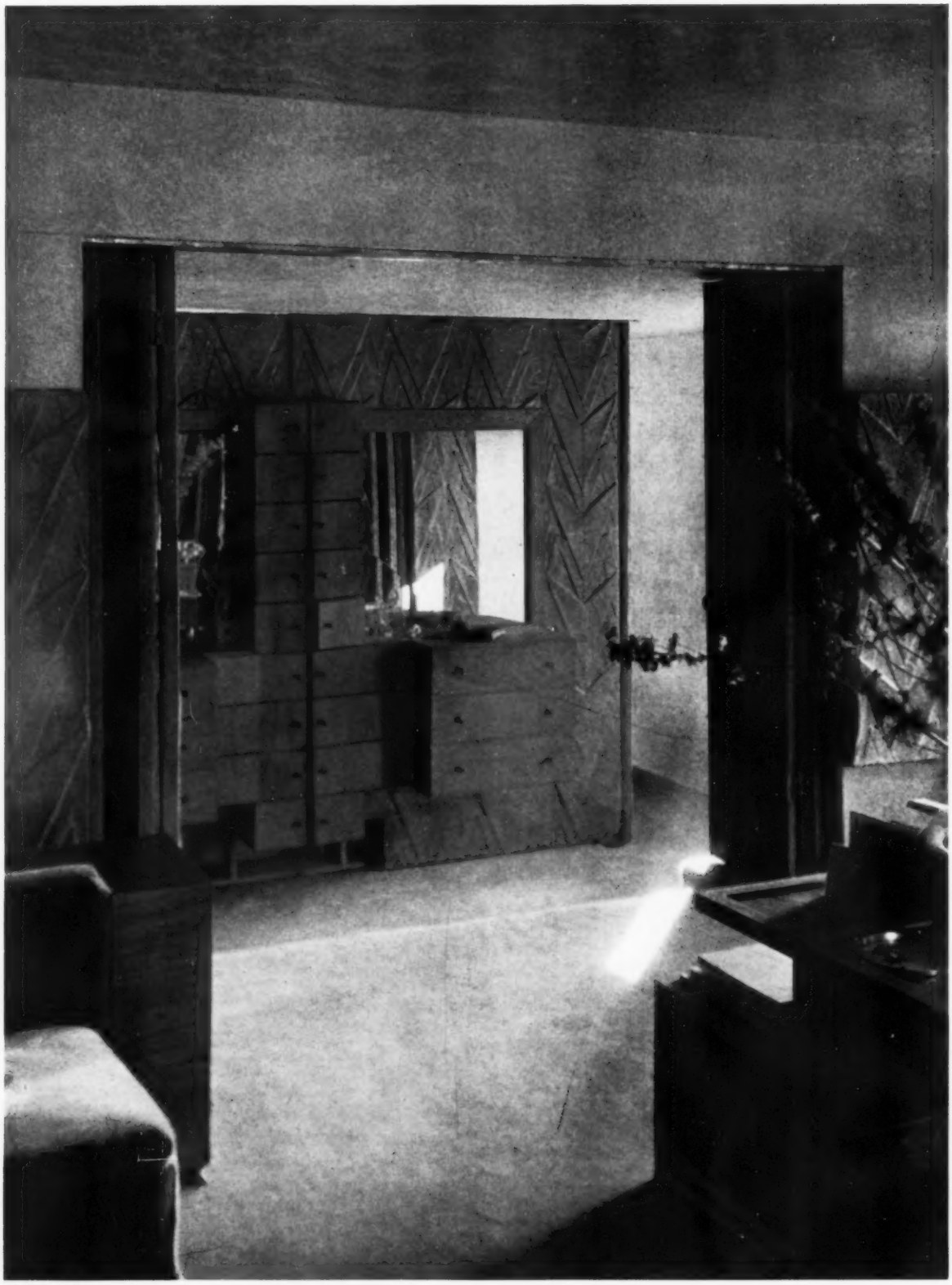


Photo. Connell

VIEW FROM LIVING ROOM TOWARD LOUNGE

HOUSE OF LOUIS SAMUEL, LOS ANGELES, CAL.

LLOYD WRIGHT, ARCHITECT

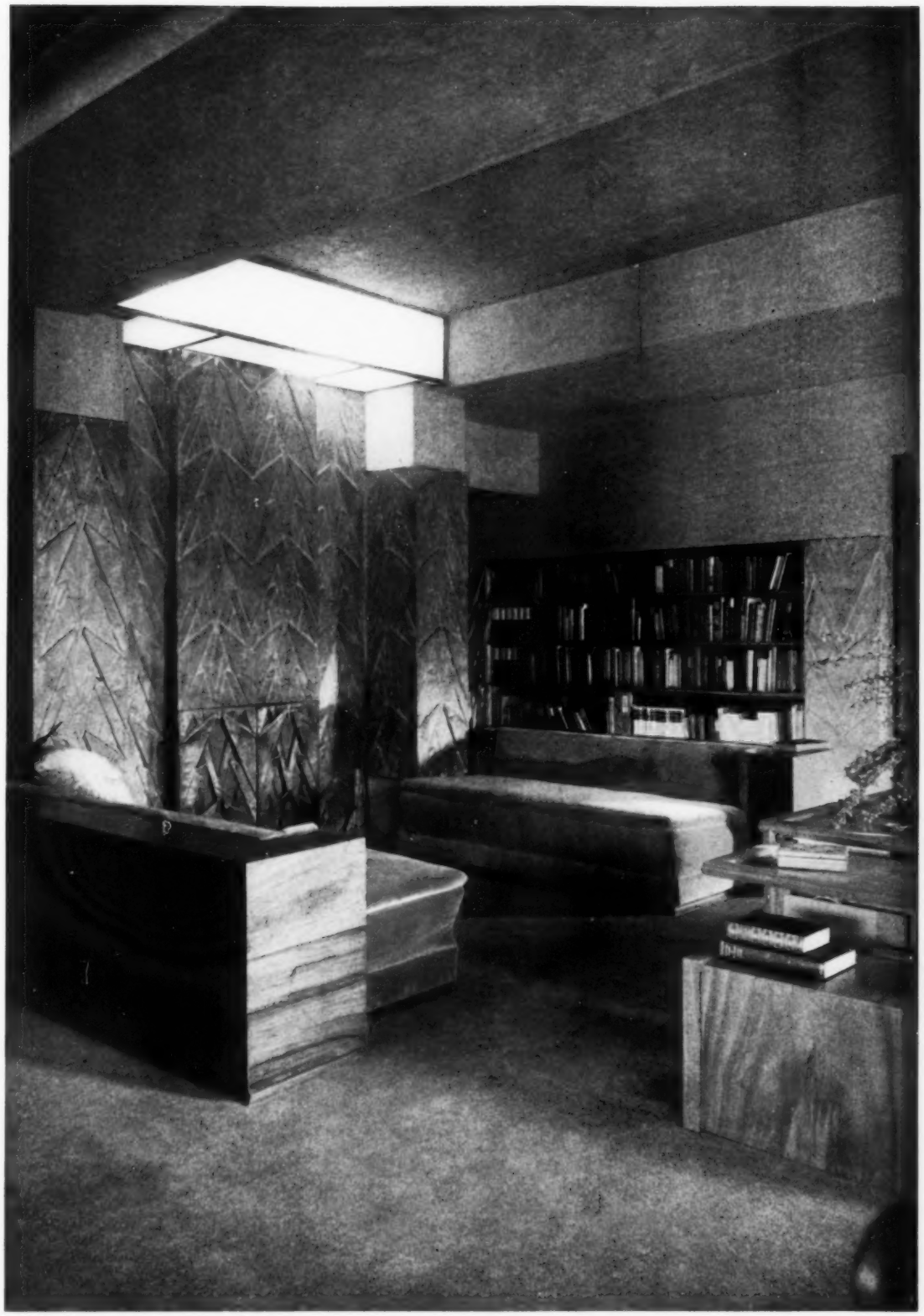
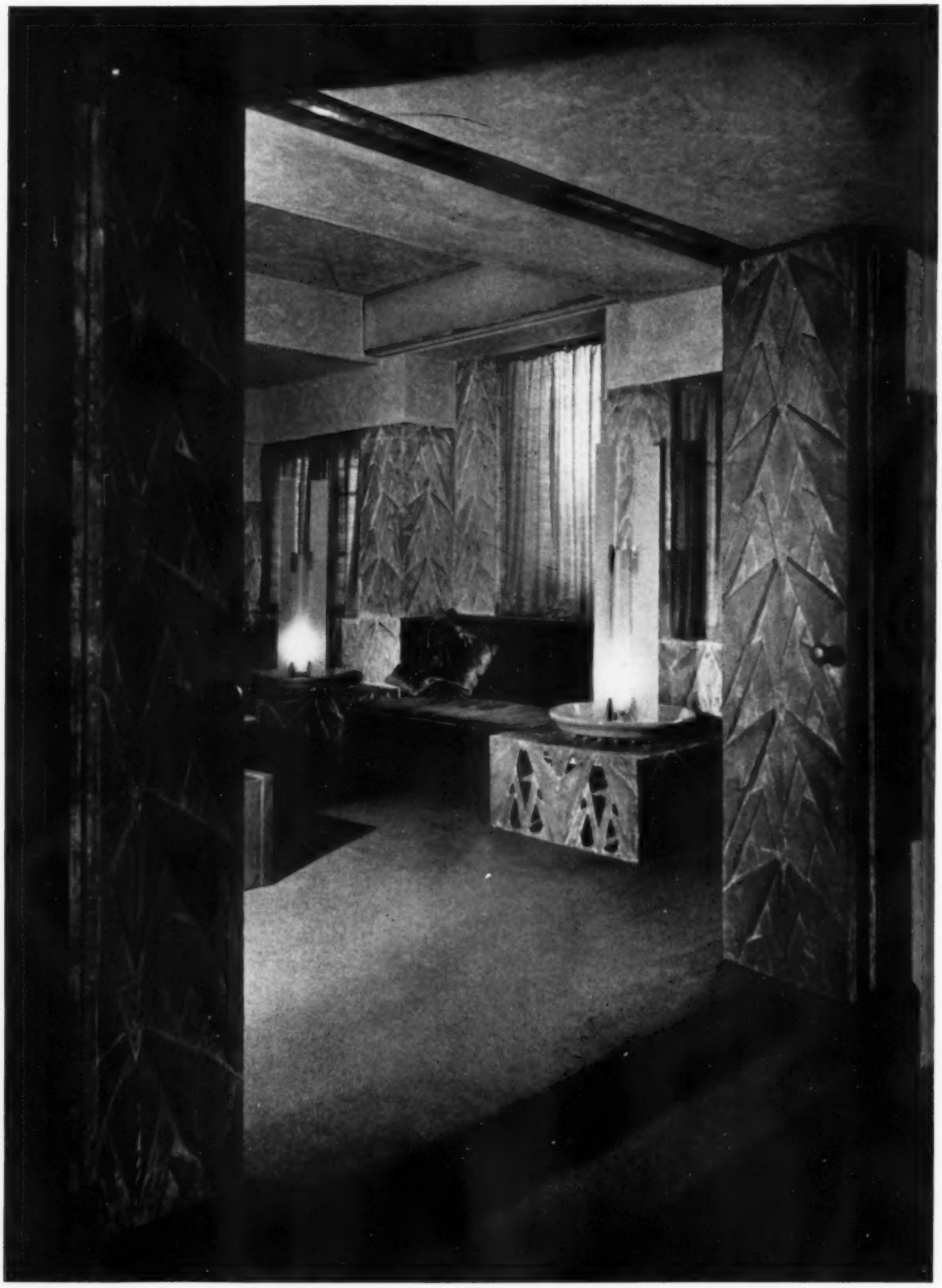


Photo. Connell

LIVING ROOM

HOUSE OF LOUIS SAMUEL, LOS ANGELES, CAL.

LLOYD WRIGHT, ARCHITECT



Photo, Connell

LIVING ROOM

HOUSE OF LOUIS SAMUEL, LOS ANGELES, CAL.

LLOYD WRIGHT, ARCHITECT

THE SAMUEL HOUSE, LOS ANGELES

LLOYD WRIGHT, ARCHITECT

AN ELEGANT SOLUTION

It is fortunate for the development of the new architecture that the genius for three-dimensional proportion continues so potently in Lloyd Wright the son, whose accomplishment in the Samuel residence in Los Angeles carries on a sequence of structural simplification. It presents a thorough and sound approach to what the mathematicians called "the elegant solution"; that is, a solution stripped of the redundant, keen in the broader sense, appropriate in the exactitude of its structure.

•

STRUCTURE

The mechanics of the place involve a simplicity of structural scheme unachieved until now outside of Europe, possibly not there: a residence of reinforced concrete, glass, and metal throughout—walls, floors, ceilings, roofs, girders, foundations, doors, windows, and radio antennae included. No wood has been used except during construction for a certain limited amount of temporary scaffolding to support the unique precast molds.

And they are unique. Here again, for the first time, the forms carrying the steel and cement grout which weave the building together, making it an integral monolith, were not of wood but of concrete. This in turn shapes the skeleton and acts as a rust- and fire-proof covering for the steel reinforcement.

The structural steel and iron are covered by a sheath of concrete, which at the first glance would seem to indicate a weighty construction; but this is actually lighter, in the quantity of materials used for an equivalent structural strength, than any class-A building yet executed in this country. Probably the lightest, by one half, of all reinforced concrete buildings for the purpose ever designed and built.

Wherever the porous concrete would not resist moisture, or where metal is exposed to air or moisture, copper flashing has been used, woven over, round, and through, the building in a rhythmic pattern. The same covers doors, windows, fireplace, hood, and heaters. This interweaving, together with the flow of the structural masses, serves to establish an intense harmony of the whole.

•

FINISH

The essential nature of the materials has here been honorably dealt with. No paint has been used. The colors are all inherent in the materials inside and out, the result of chemical changes: aggregate-colored plaster, verde-green copper, and clear glass.

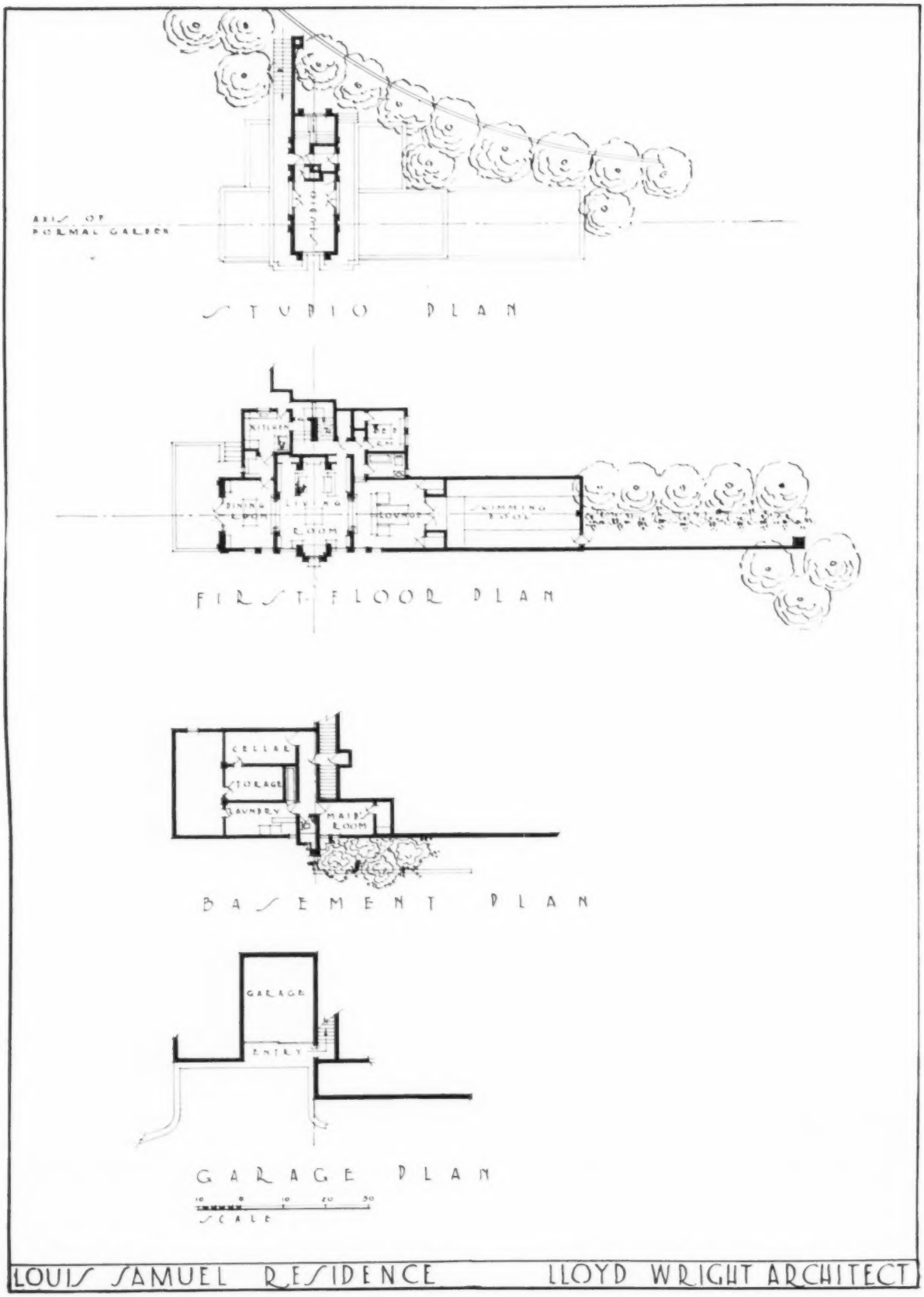
•

SOCIAL USE

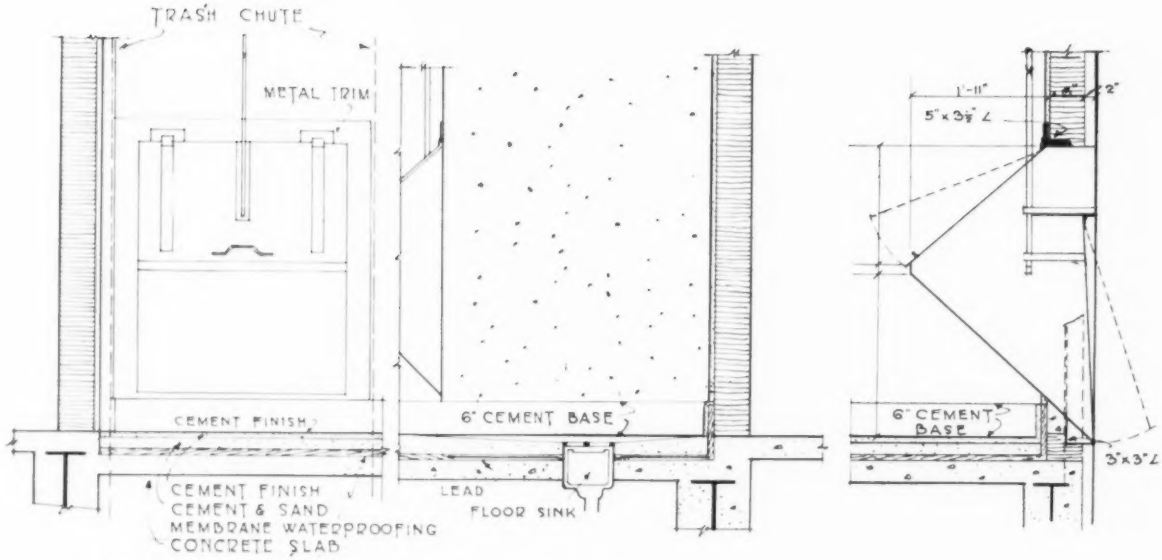
The problem of the double functioning of the home has been well met. It must intimately serve the comfort of a small and private group; yet it is also upon occasion to expand to receive guests in large number. And the Samuel house does astonishingly expand and contract. The great room can be thrown open on two sides upon garden and swimming pool; it flows out to paved roofs of varying levels. The house is in fact made to be enjoyed on its upper surfaces as well as inside. The steep hillside slope into which the structure is locked and knit has made possible a design in which the major rooms open out upon garden, pool, or terraces which roof the rooms below; so that life is no longer lived in boxes, but establishes, in and from every part, a relation with the elements and the terrain.

The building fits its place as roots fit earth and tree. Presenting an environmental sheath for a family whose particular desires and life-concepts the architect has deeply considered, it does to a high degree make possible the kind and quality of life they have desired.

PAULINE G. SCHINDLER.


AXIS OF FORMAL GARDEN
STUDIO PLAN
KITCHEN
BED ROOM
DINING ROOM
LIVING ROOM
LOGGIA
SWIMMING POOL
FIRST FLOOR PLAN
CELLAR
STORAGE
LAUNDRY
MAID'S ROOM
BASEMENT PLAN
GARAGE
ENTRY
GARAGE PLAN
SCALE
LOUIS SAMUEL RESIDENCE
LLOYD WRIGHT ARCHITECT

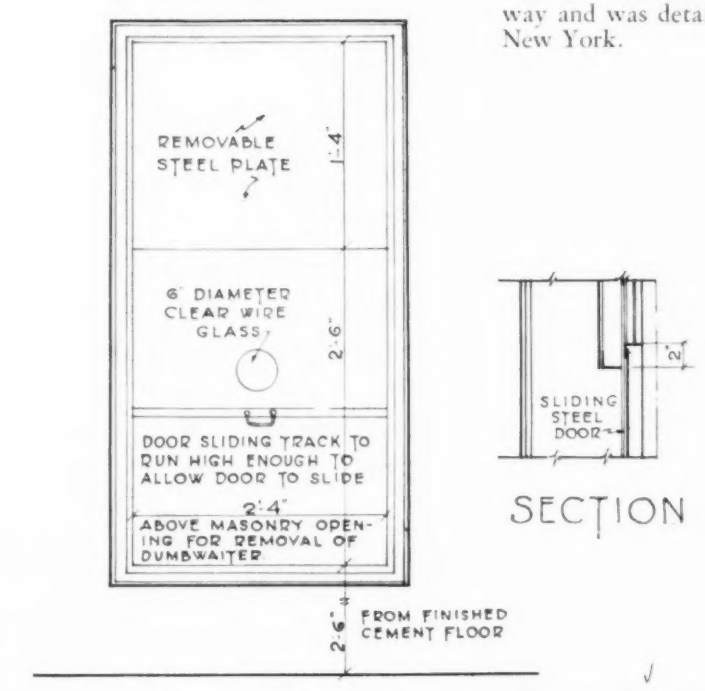
NOTES ON DRAFTING AND DESIGN



DETAIL OF TRASH CHUTE SECTION

TRASH CHUTE TO BASEMENT

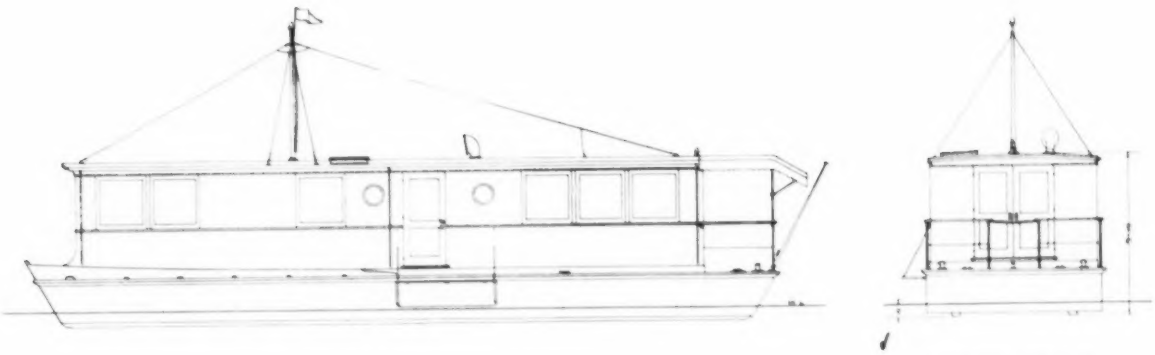
Last month we illustrated a design for a drinking fountain with a chute to the basement for discarded drinking cups. The same principle of "Chute to basement" may be applied for the accumulated paper and refuse in office and public buildings. The trash chute illustrated is placed in janitor's closet in hallway and was detailed by Starret and Van Vleck, Architects, New York.

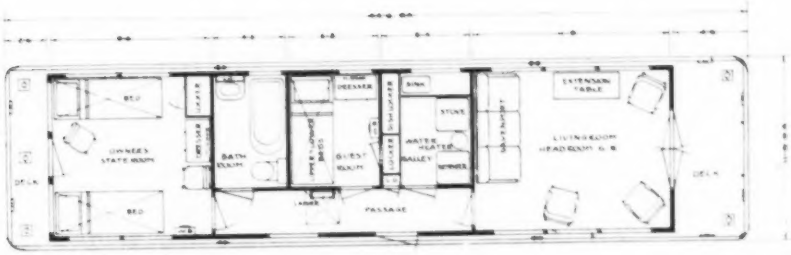


DETAIL OF DUMBWAITER

IMPROVING THE DUMBWAITER

Because of fire hazard and for wear and tear, the dumbwaiter installed in apartment houses and restaurants should be of steel. The detail shown opposite is an accepted standard size and height above floor. Starret and Van Vleck, Architects.



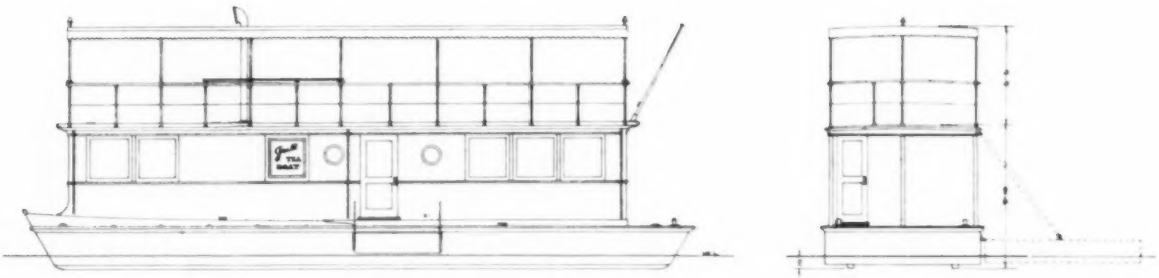


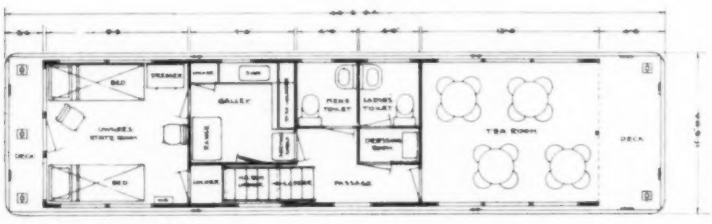
Courtesy, American Boat Corp.

HOUSE BOAT

A summer house on the water, capable of being moored in different places, can be designed by the architect. This compact houseboat with complete living quarters and deck space costs slightly over three thousand dollars.

(In the August issue of the *Record* will be a treatment of "Week-End Houses.")





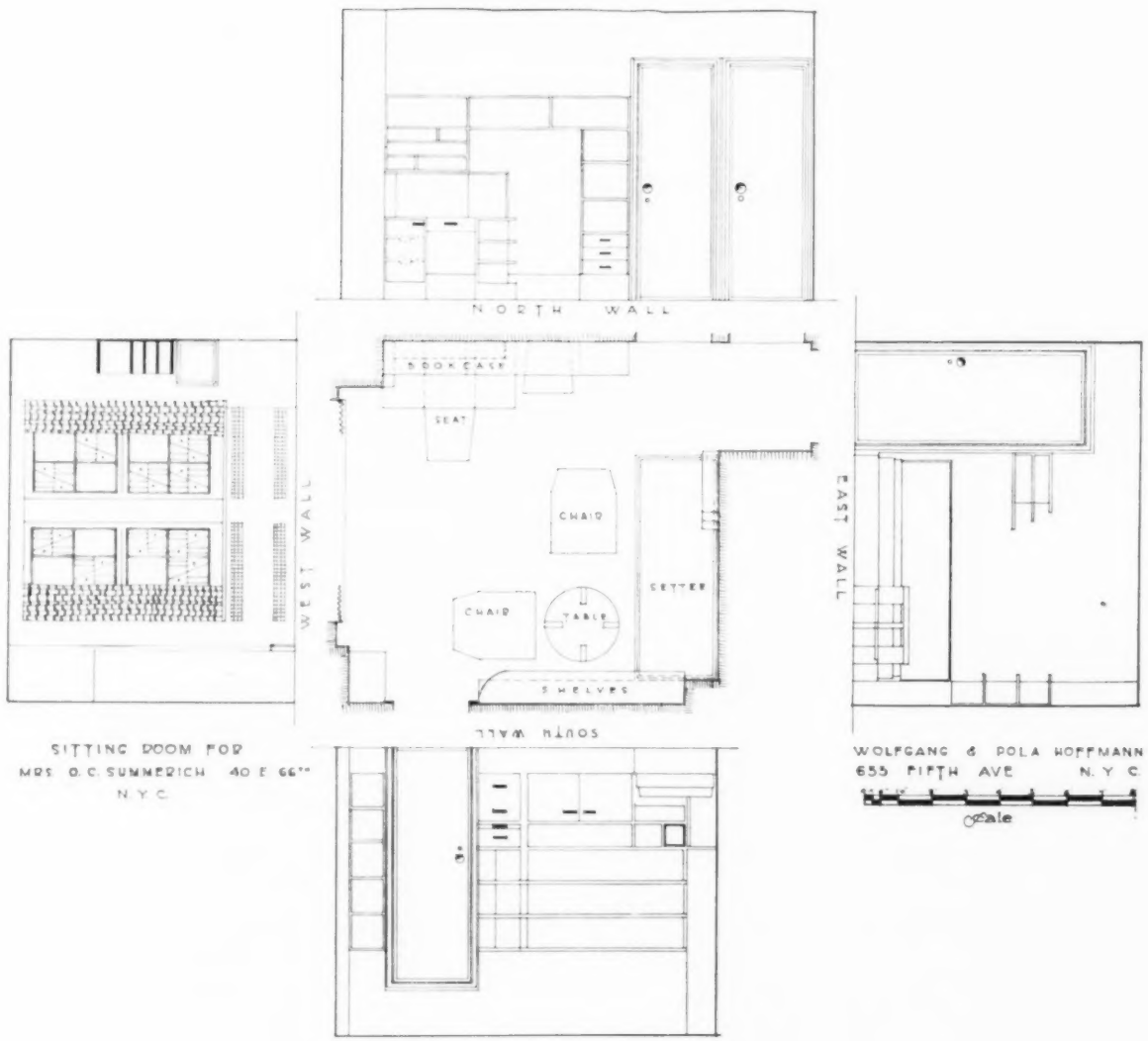
Courtesy, American Boat Corp.

FLOATING TEA HOUSE

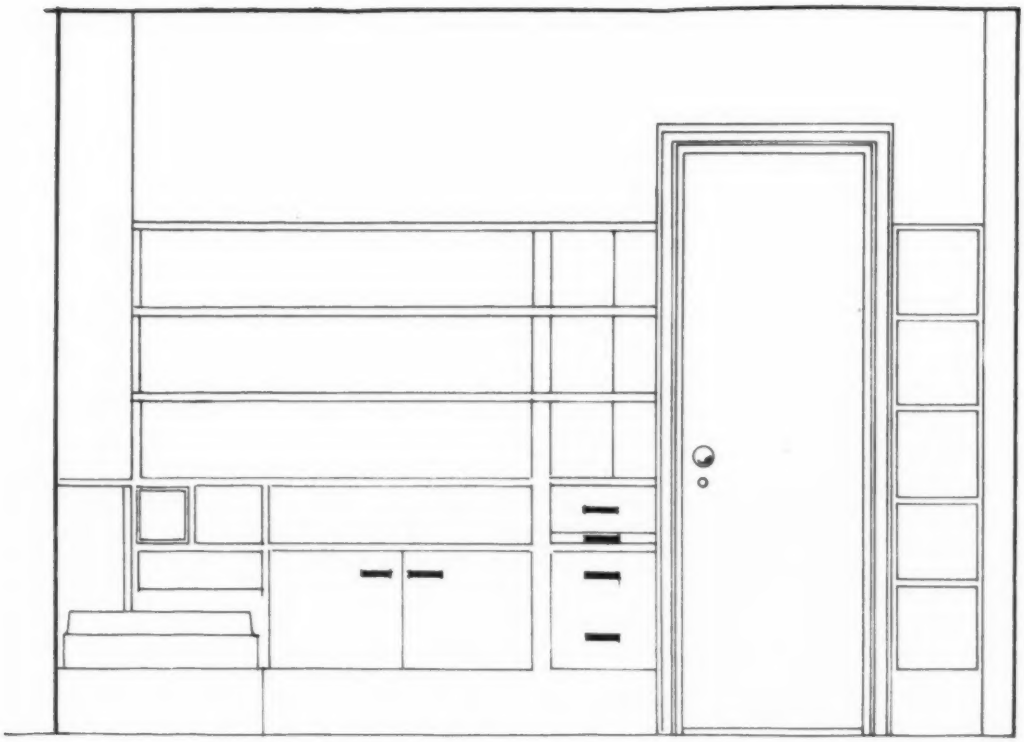
This tea house on the water requires no real estate and may serve on an estate for private entertainment or for a tea-room business. There is space for four tea tables in the cabin and many others on the upper deck, 11′ x 45′.

A COMPACT LIVING ROOM

WOLFGANG AND POLA HOFFMANN, ARCHITECTS



IN AN APARTMENT FOR MRS. O. C. SOMMERICH, NEW YORK CITY



SOUTH WALL
ELEVATION

VIEW OF SOUTH SIDE

A COMPACT LIVING ROOM

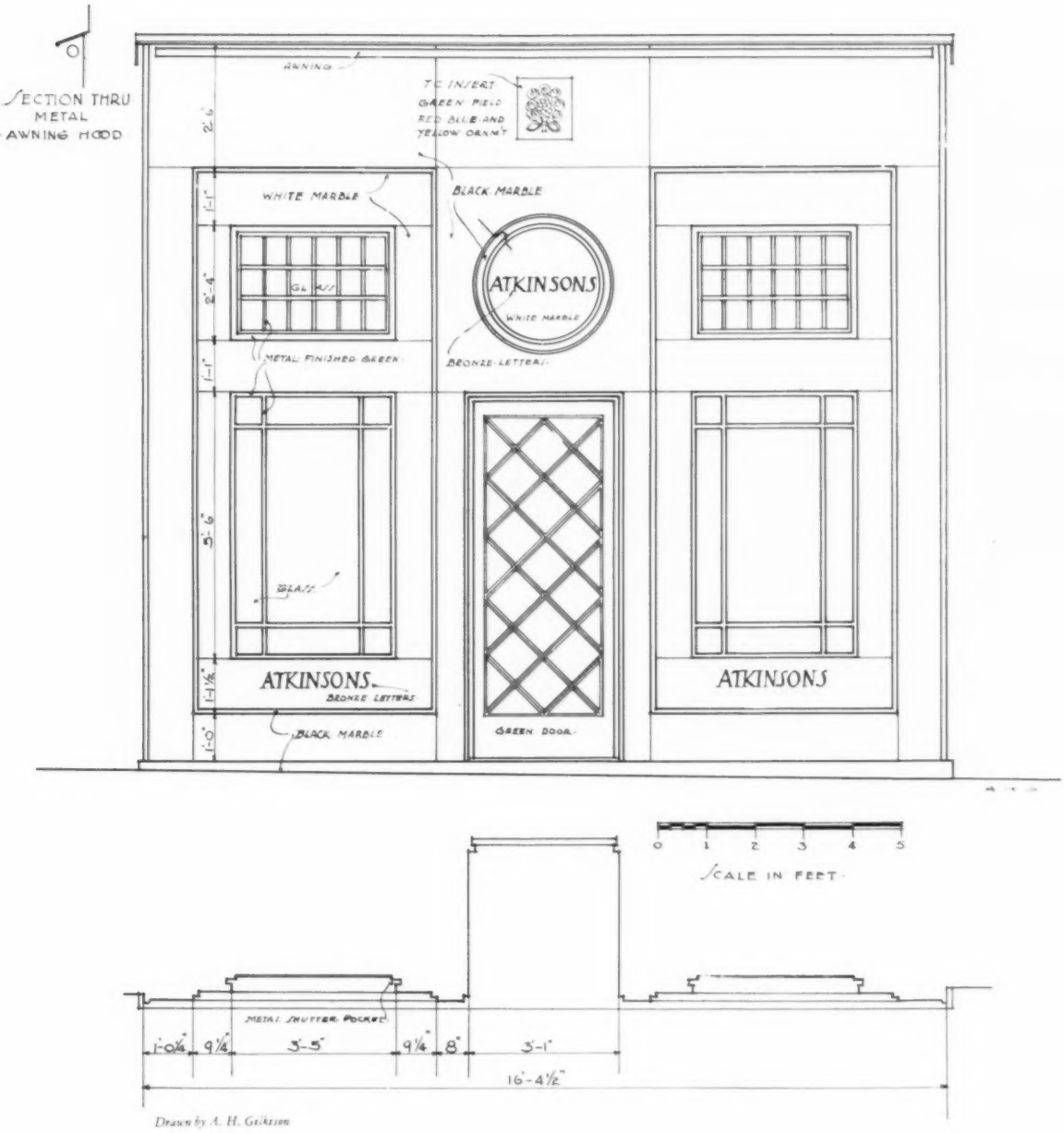
WOLFGANG AND POLA HOFFMANN, ARCHITECTS

Two views of this room were published in the March issue of THE ARCHITECTURAL RECORD. The floor plans and alterations published herewith show how a remarkably economical use of space was achieved. The desk, shelves, and cabinet, are painted lobster color; the walls are silver, the rug and curtain in shades of lobster and gray; the chair and couch upholstered in yellow lacquered cloth.

DETAILS OF CURRENT ARCHITECTURE

FOUR DRAWINGS BY A. H. GILKISON

Above: The Bianca Shop, Paris. An inexpensive front of wood with metal trim and letters. The incised lines are U-shaped grooves, gilded



Drawn by A. H. Gilkison

DETAILS OF CURRENT ARCHITECTURE

A PERFUME SHOP, RUE DE LA PAIX

DETAILS OF CURRENT ARCHITECTURE

A PERFUME SHOP, RUE DE LA PAIX

White and black walls. Green terra cotta insert with colored flowers in relief. Metal work of bronze

Drawn by A. H. Gilkison

DETAILS OF CURRENT ARCHITECTURE

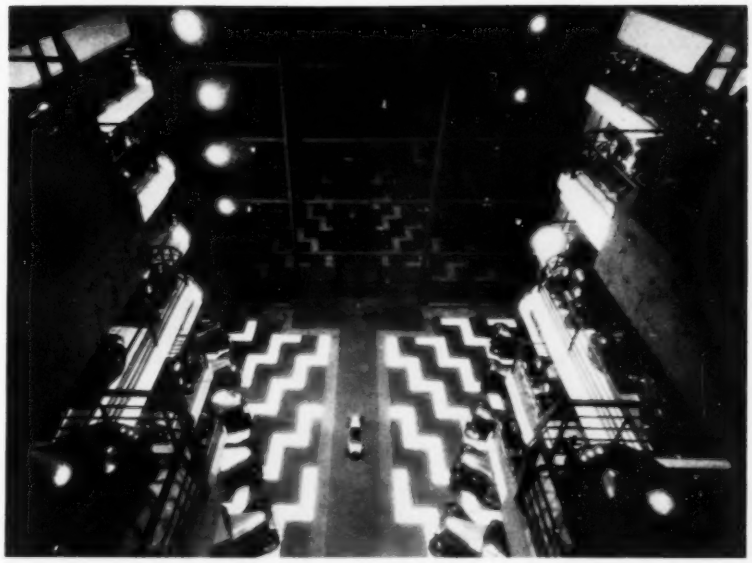
A SHOP FRONT, NEAR RUE DE LA PAIX

With light colored marble,
bronze letters, metal trim

THE CITROËN AUTOMOBILE SALES BUILDING, PARIS

By C. THEODORE LARSON

LAPRADE AND BAZIN, ARCHITECTS



THE PSYCHOLOGY OF THE DESIGN

Efforts to concentrate the attention of shoppers on a sales commodity have often consisted of suppressing the area of window glass on the facade and displaying to the street only a small vase or perhaps a pair of shoes. In this case the whole facade becomes a gigantic show window, six stories high and proportionally wide. At the first glance the man in the street sees automobiles of all types, some fifty models, on display before him, ready for selection and delivery. If the impulse is to purchase a car, as intended, side portals flanking the window allow the prospective customer to drive in with his ancient vehicle and leave with a new model.

The automobiles are displayed on the ground floor and the five cantilevered balconies.

•

SERVICE CONTROL

An older building exists in the rear, extending through the block to another street. This is used as a storage garage, with ramps leading to the upper floor, and is directly connected with the newer part, reserved exclusively for display and sales. Between the two parts, on the main floor, are located the administration offices and the service department, housed inside glass partitions with special ventilation. Incoming and outgoing cars are easily checked.

ROOF TERRACE

In conjunction with the sales and service departments, a driving school is maintained by the agency. The roof terrace is utilized for this purpose, being laid out with small streets and curb lines where the novice can practice making turns, and where automobiles can be tested.

•

CONSTRUCTION

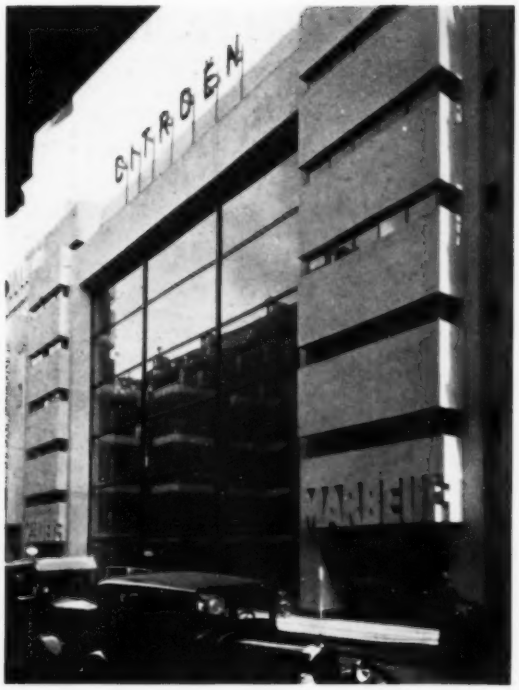
The central window is of plate glass, 53′ 6″ high and 68′ 2″ wide. It is reinforced against wind pressure by two vertical trusses designed for uniform resistance. To give scale to this large window the architects have framed it by two flanking and slightly projecting bays with horizontal fenestration at each floor level.

The framing is steel, with reinforced concrete for the floors and walls. The interior supports are surrounded by sheet metal, painted black and furred out to give the columns a more massive appearance.

•

COLOR SCHEME

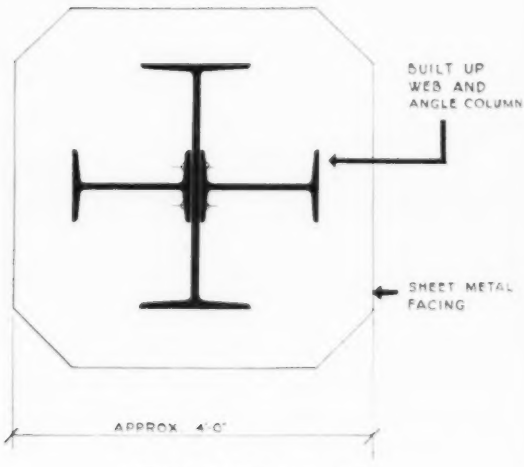
The concrete is a light buff. The columns as well as the metal balustrades on the cantilevered balconies are painted black, an artifice that makes them less visible and emphasizes all the more the horizontality of the floors. The doors of the elevator shaft, located in the stair well, are painted a vermilion red, in contrast with the black.



CITROËN SALES BUILDING,
PARIS

LAPRADE AND BAZIN, ARCHITECTS

"A show window 6 stories high
and 68 feet wide"



DETAIL OF COLUMN WITH
FALSE FACING

CITROËN SALES BUILDING, PARIS

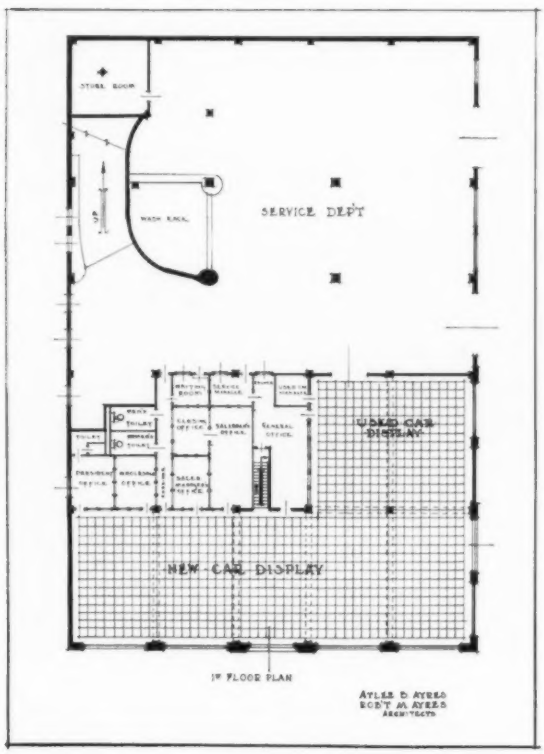
LAPRADE AND BAZIN, ARCHITECTS

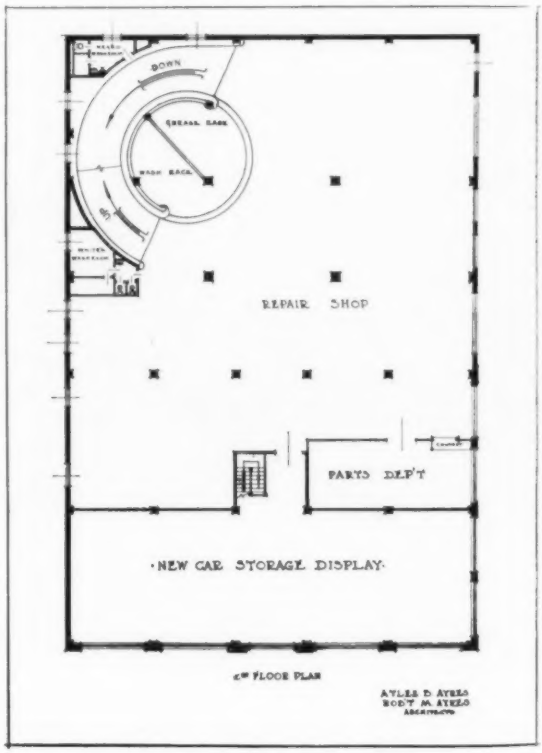
"At first glance the man in the street sees 50 models." (Text on page 539)

Photo. Patteson

PACKARD MOTOR CAR COMPANY, SAN ANTONIO, TEXAS

ATLEE B. AYRES AND ROBERT M. AYRES, ARCHITECTS





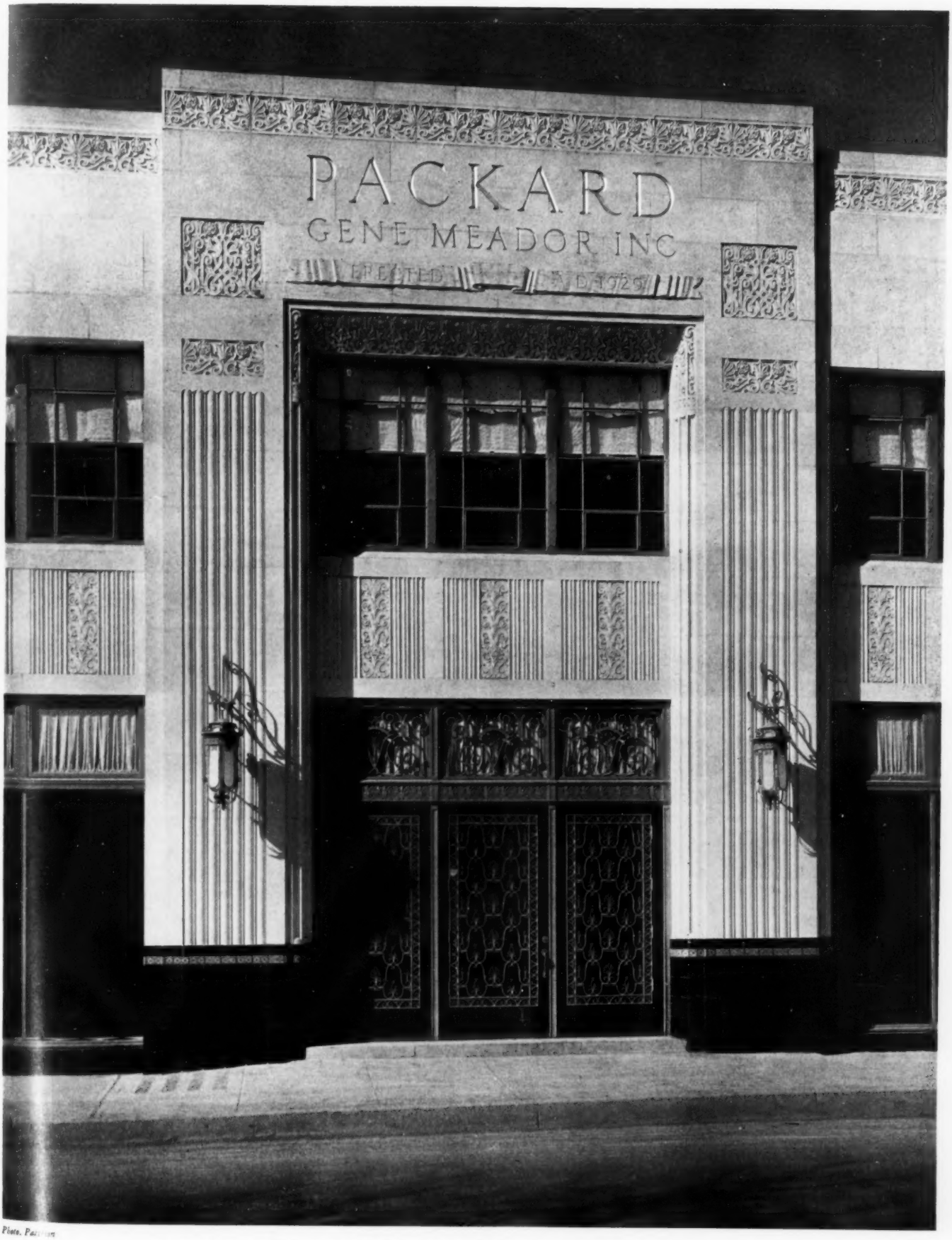


Photo. Paul Hester

PACKARD MOTOR CAR COMPANY BUILDING, SAN ANTONIO, TEXAS

ATLEE B. AYRES AND ROBERT M. AYRES, ARCHITECTS

NAIL STUDDED DOORS

from North Italy

MEASURED, DRAWN AND PHOTOGRAPHED BY MYRON BEMENT SMITH

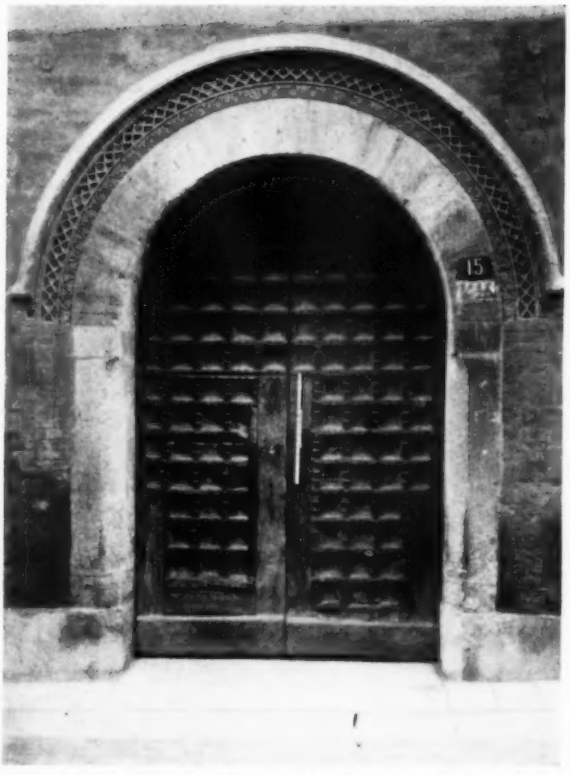


FIG. (1). DOORWAY, 15 VIA MAZZINI, PAVIA

Fig. (2).
Double doors hung in a pointed arched opening 5 feet wide by 10 feet high. The drawing shows the lower right corner of the opening. The doors date from about 1350 A.D., but have been fully restored

Figs. (1) and (3).
Double doors hung in a round arched opening 8 feet 5 inches wide and 16 feet high. The detail photograph and drawing both show a part of the right door with its hinge stile. The doors are oak and were probably made about 1400 A.D.

FIG. (2). SIDE DOORWAY, S. PIETRO MARTIRE, VERONA

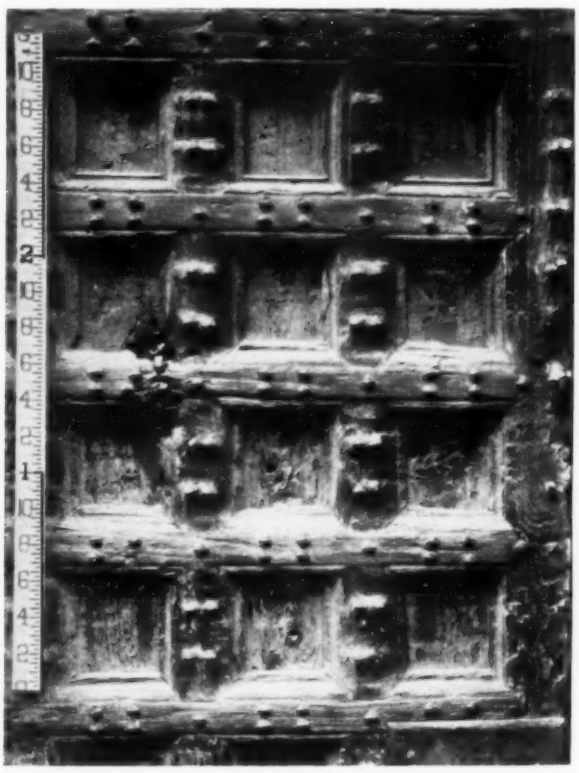
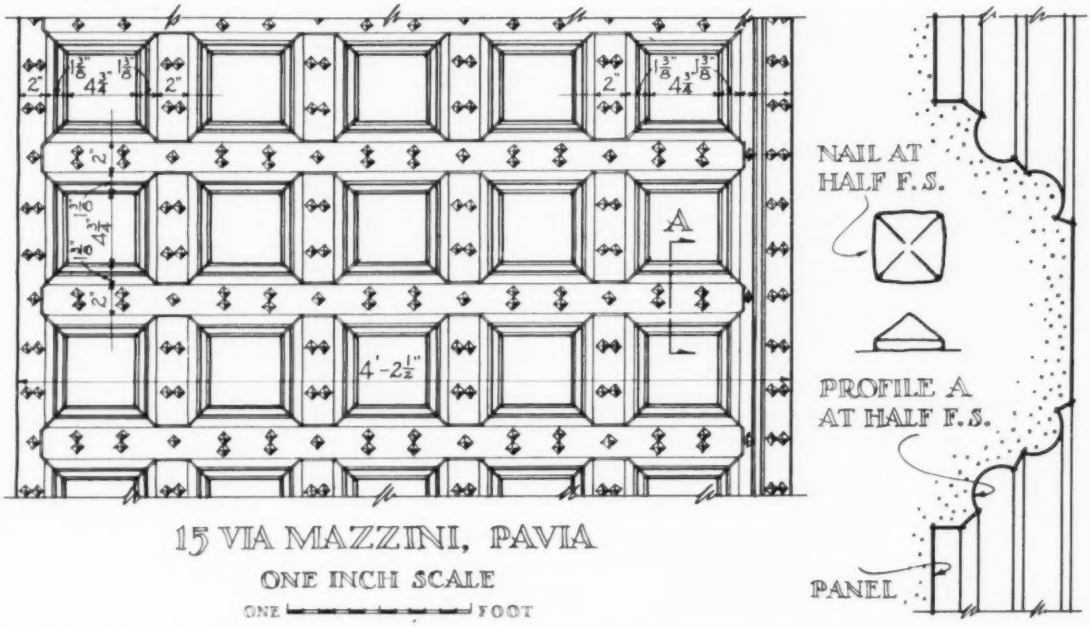


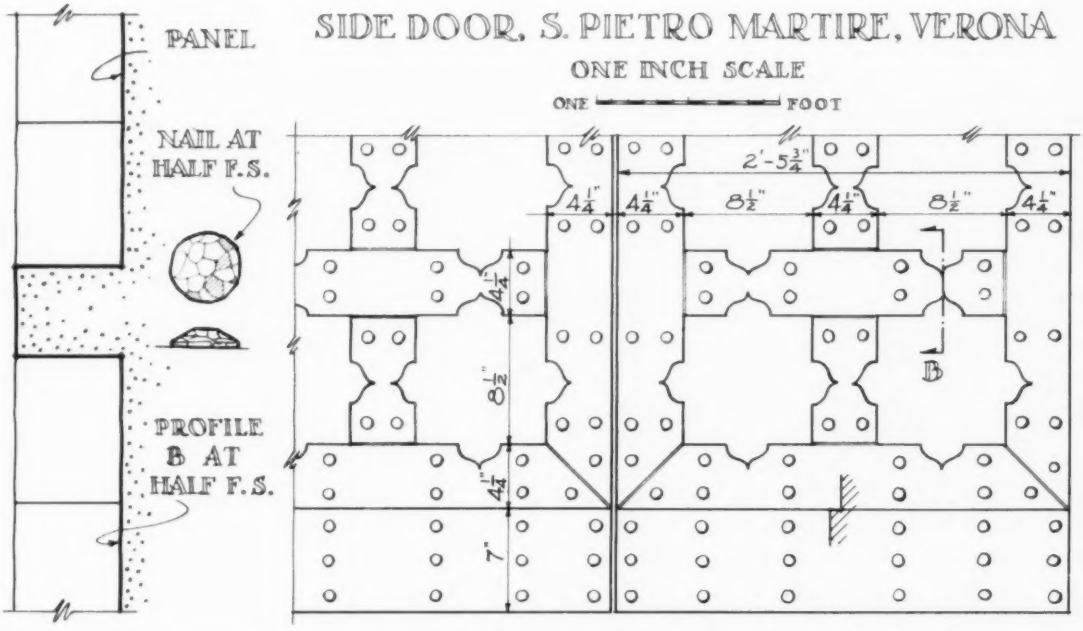
FIG. (3). DETAIL OF DOOR, 15 VIA MAZZINI, PAVIA



15 VIA MAZZINI, PAVIA

ONE INCH SCALE

ONE ——— FOOT



SIDE DOOR, S. PIETRO MARTIRE, VERONA

ONE INCH SCALE

ONE ——— FOOT

NAIL STUDDED DOORS

SERIES 1 — FROM NORTH ITALY — PLATE 1

MEASURED, DRAWN AND PHOTOGRAPHED BY
MYRON BEMENT SMITH

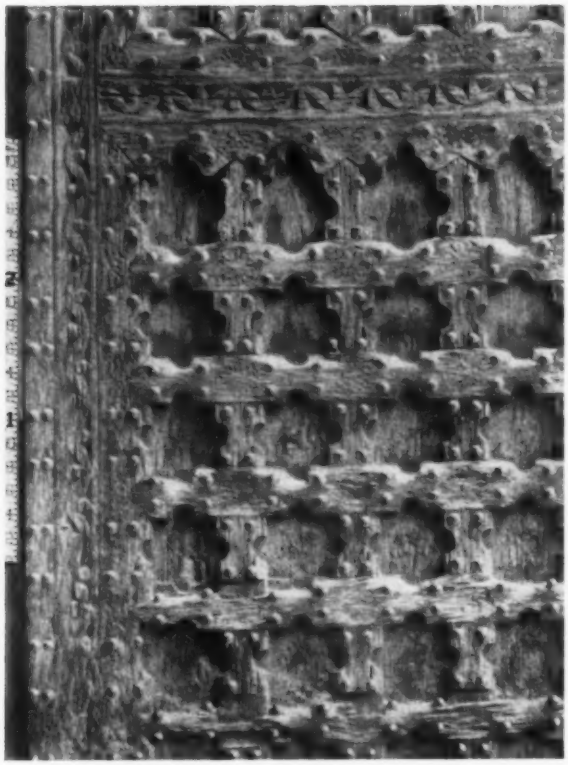


FIG. (4). DETAIL OF DOOR, S. ANASTASIA, VERONA

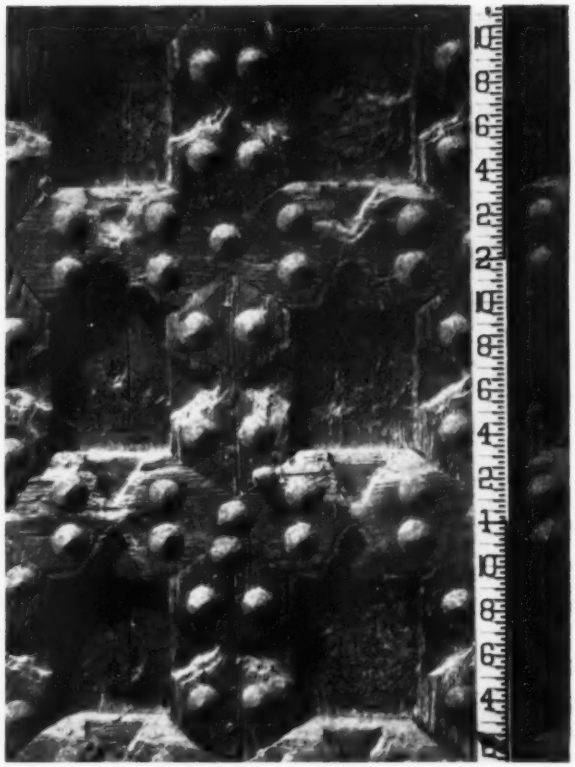


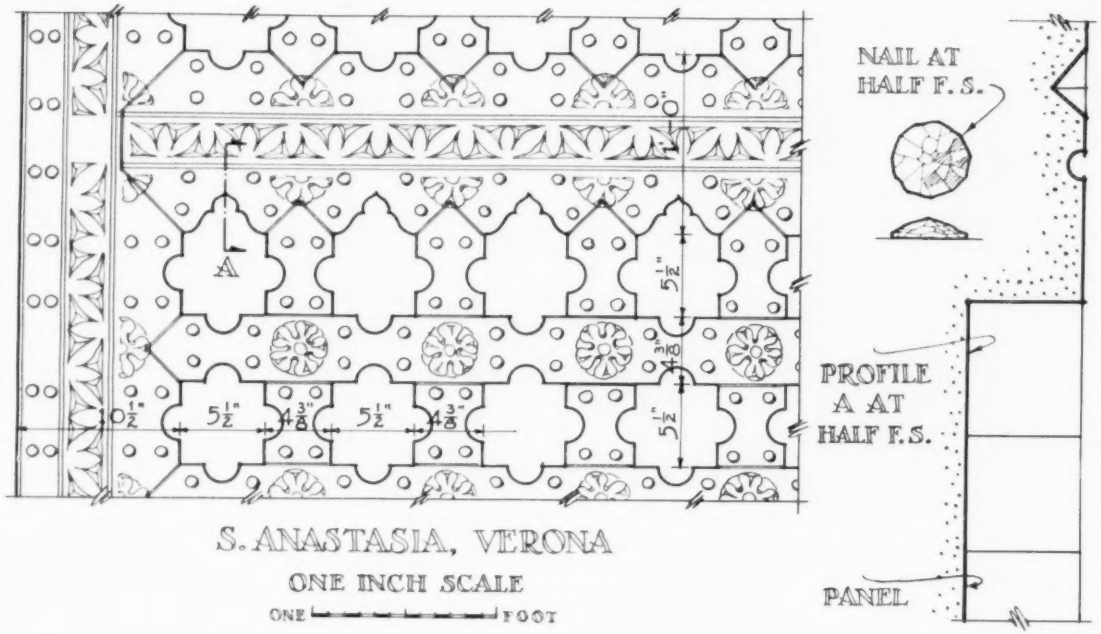
FIG. (5). DETAIL OF DOOR, 4 VIA ARCHE SCALIGERE, VERONA

Round arched opening 11 feet 3 inches wide and 13 feet 6 inches high. Drawing shows a part of the right door with the stile at edge and the wide rail at the spring line. The material is oak. Doors now dismantled and hang in courtyard. Date from 14th century. Double doors

FIG. (6). DOORWAY, S. ANASTASIA, VERONA

FIGS. (4) and (6). S. ANASTASIA, VERONA

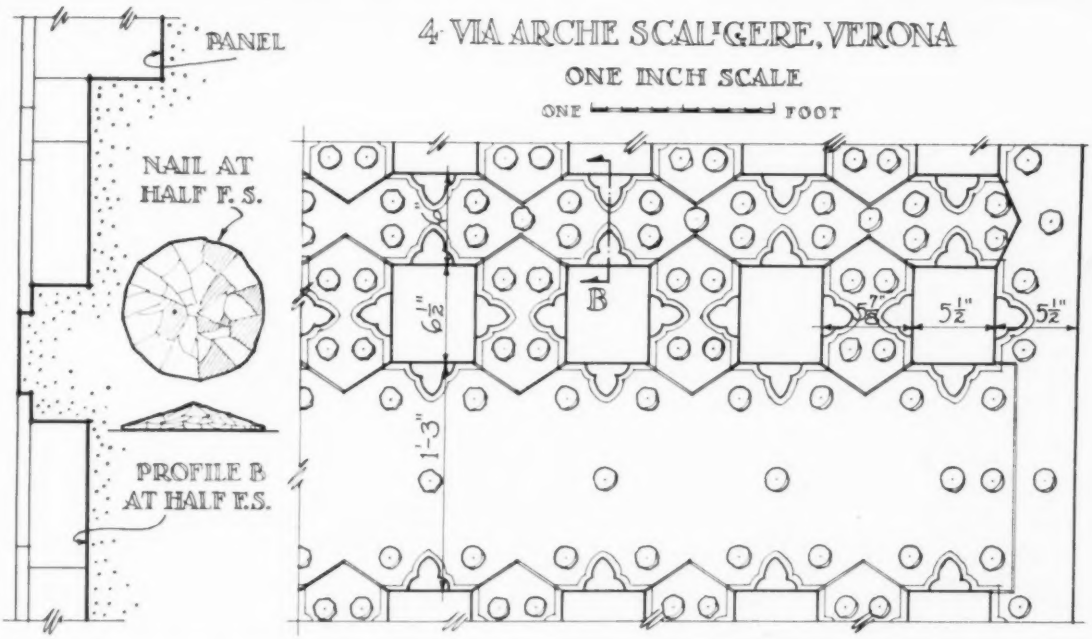
Square headed double openings, each 7 feet 7 inches wide and 16 feet 6 inches high. The detail photograph and drawing both show the middle section of the right door, with the dividing rail. The wood is oak, chip carved as shown. Dates from 1300, A.D.



S. ANASTASIA, VERONA

ONE INCH SCALE

ONE FOOT



4 VIA ARCHE SCALIGERE, VERONA

ONE INCH SCALE

ONE FOOT

NAIL STUDDED DOORS

SERIES 1 — FROM NORTH ITALY — PLATE 2

MEASURED, DRAWN AND PHOTOGRAPHED BY
MYRON BEMENT SMITH

FIG. (7). DETAIL OF DOOR, 1 VIA FILODRAMMATICI, MILANO

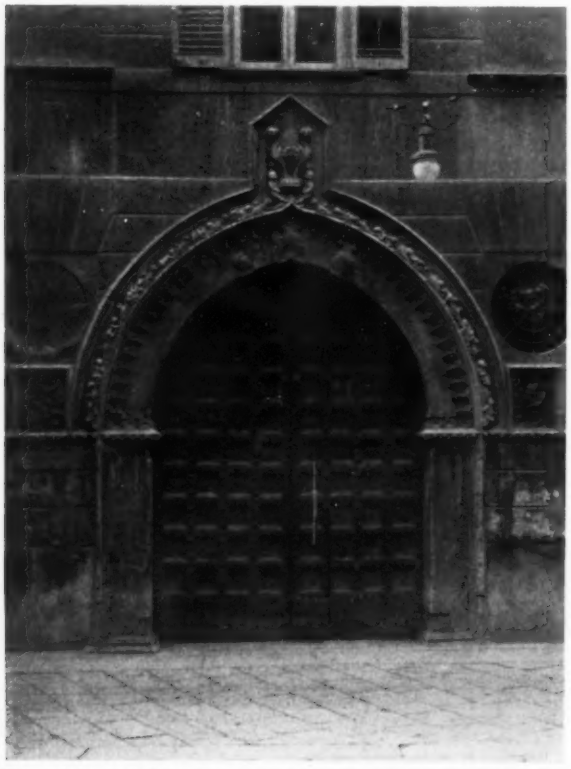


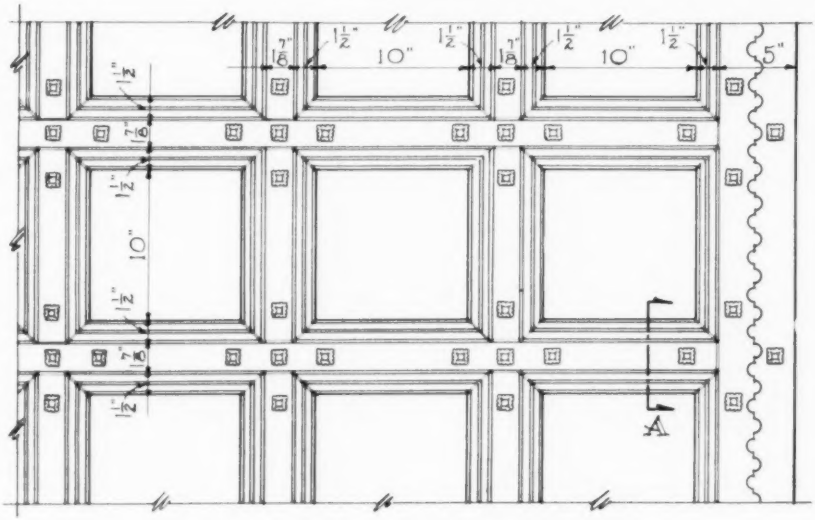
FIG. (8). DOORWAY, 1 VIA FILODRAMMATICI, MILANO

FIG. (9). DETAIL OF DOOR, BANCA MEDICEO, MILANO

Round arched opening 9 feet 9 inches wide. The detail drawing and the photograph both show the panels and meeting stile of the left door. Built 1457–1470, A.D. by Michelozzo Michelozzi for Pigello Portinari's palace. Now preserved in Museo Sforzesco. Double doors

FIG. (7) and (8). 1, VIA FILODRAMMATICI, MILANO

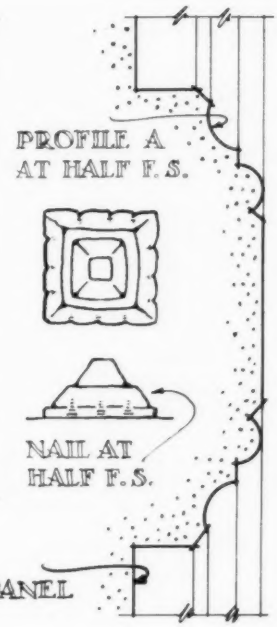
Pointed arched opening 9 feet 10 inches wide. The detail photograph shows the meeting stiles while the drawing is of the right door panels and the meeting stile. The doors are of pine. They date from about 1490 A.D.

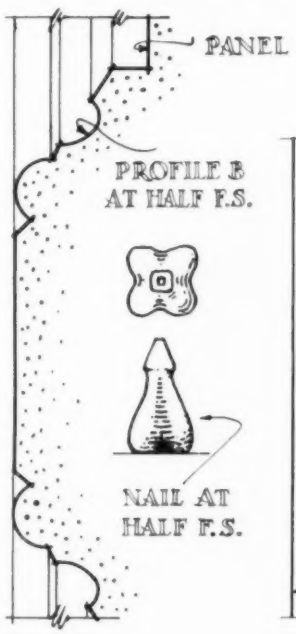


BANCA MEDICEO, MILANO

ONE INCH SCALE

ONE FOOT

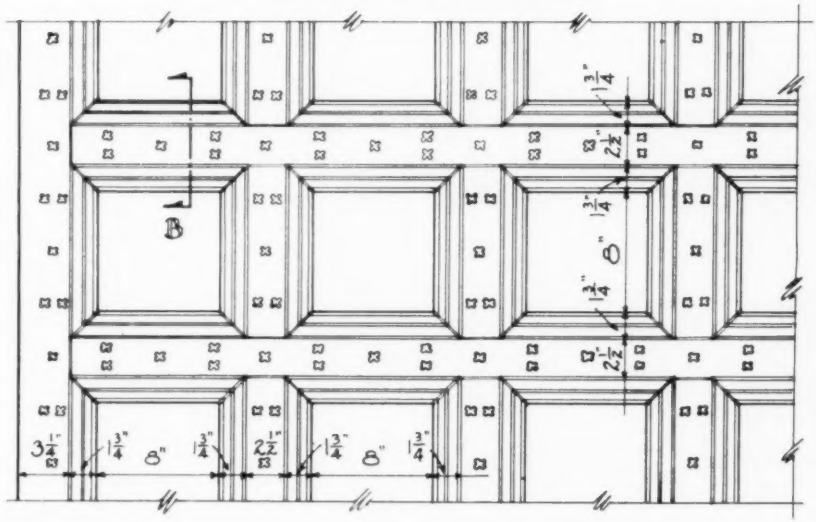




1 VIA FILODRAMMATICI, MILANO

ONE INCH SCALE

ONE FOOT



NAIL STUDDED DOORS

FROM NORTH ITALY

SERIES 1 PLATE 3

MEASURED, DRAWN AND PHOTOGRAPHED BY
MYRON BEMENT SMITH

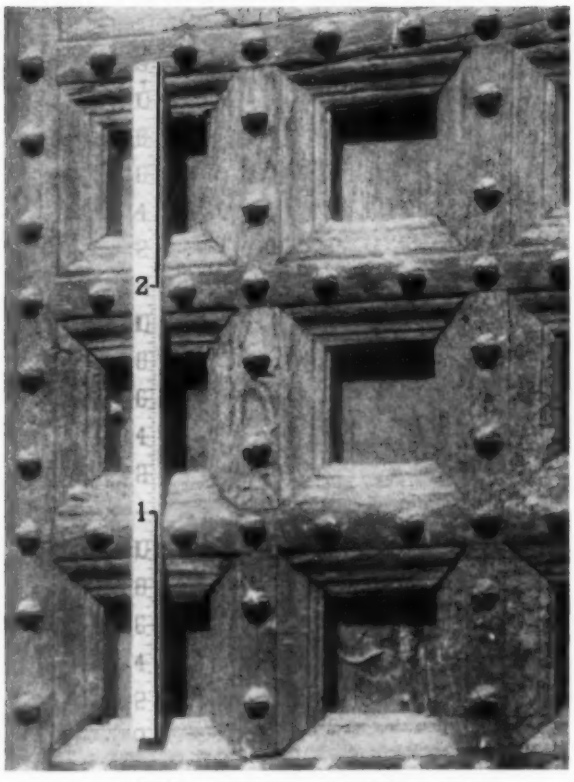


FIG. (10). DETAIL OF DOOR, THE CATHEDRAL, LODI

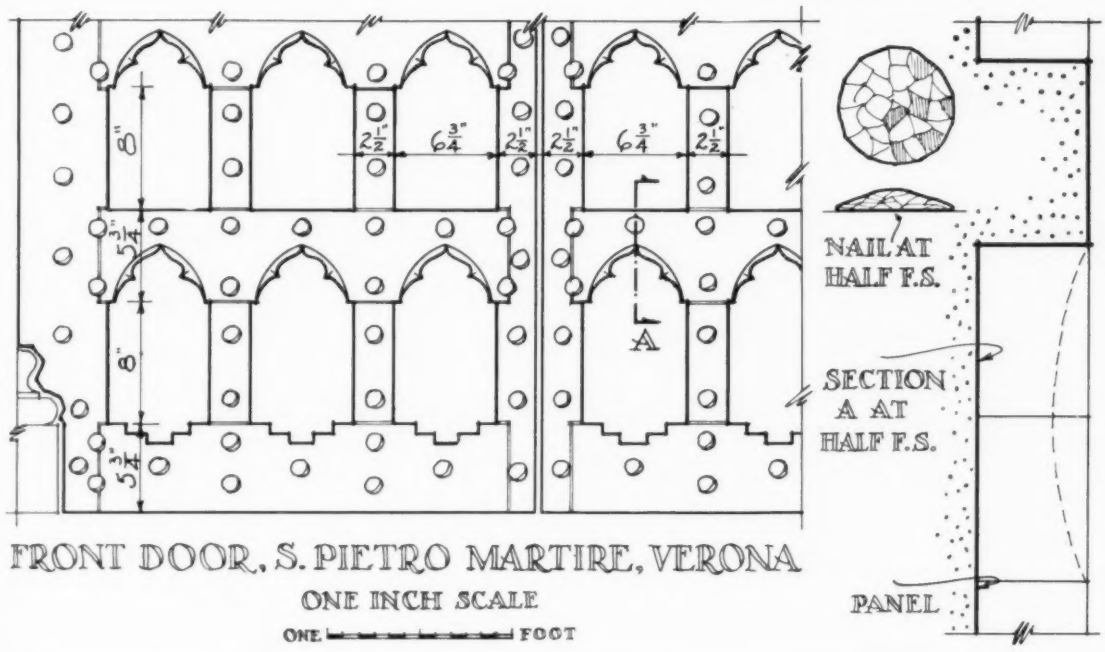
FIG. (11). DETAIL OF FRONT DOOR, S. PIETRO MARTIRE, VERONA

Square headed opening 6 feet 2 inches wide and 8 feet 4 inches high. Drawing shows part of the left door at lower outer corner, photo is of the same part at a higher level. The left door is three panels wide, the right one is four. Material is oak. Doors date from about 1350 A.D., with slight and noticeable restoration

FIG. (12). DOORWAY, THE CATHEDRAL, LODI

FIGS. (10) and (12). THE CATHEDRAL, LODI

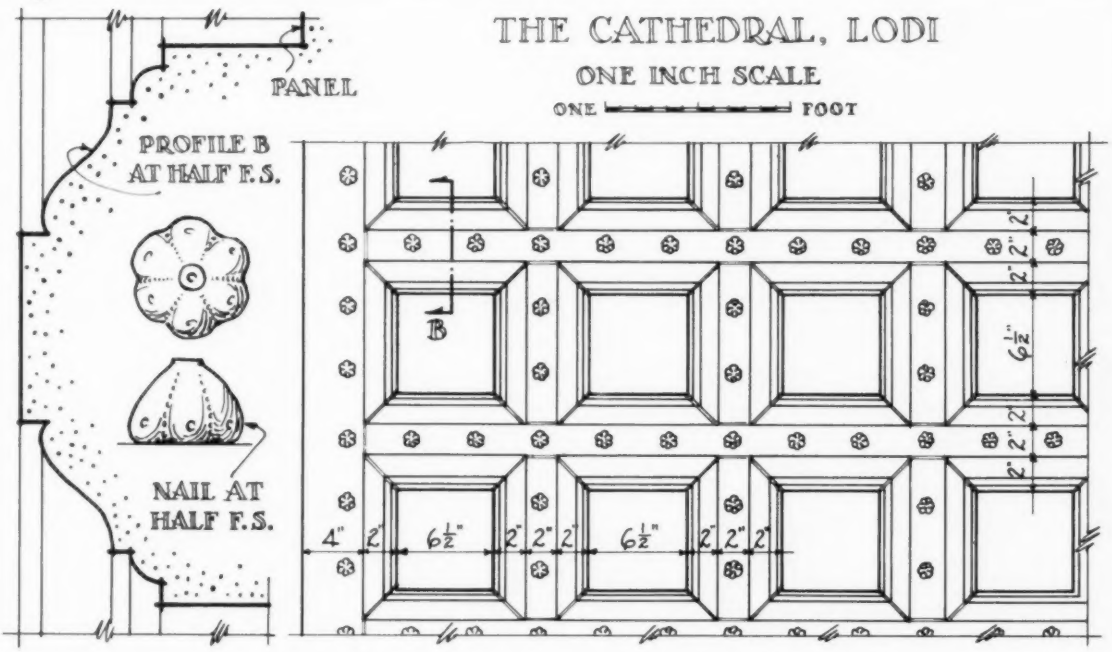
Double doors hung in a rectangular opening 9 feet 8 inches wide and 18 feet high. Both drawing and detail photograph show part of the right door with hinge stile. The rosette rail heads are ornamented with punchmarks. The actual doors date from about 1508, A.D. and are of oak



FRONT DOOR, S. PIETRO MARTIRE, VERONA

ONE INCH SCALE

ONE FOOT



THE CATHEDRAL, LODI

ONE INCH SCALE

ONE FOOT

NAIL STUDDED DOORS

SERIES 1 — FROM NORTH ITALY — PLATE 4

MEASURED, DRAWN AND PHOTOGRAPHED BY
MYRON BEMENT SMITH

HOW BUSINESS FOR ARCHITECTS MAY BE STIMULATED

THE abnormally high rate of vacancies in new buildings in some localities appears to be due not to a lack of desire for a decent home or an oversupply of dwelling space but to an oversupply of certain classes of space; in most cities this is of the more expensive type, in others, a surplus of typical middle class houses or apartments held at a rent or sale price too high for the average family.* In some few cases the vacant dwelling space is within reach of the rent-paying ability of the average man but the buildings are generally of inferior design and construction and in locations lacking in public utilities. In some cities there is an oversupply of one-room apartments, which, while they may be within reach of the average man, are certainly not suitable for the average family, which may get more space for the same rent in older buildings. It can safely be stated that practically no city or town has an oversupply of new four-room modern houses or apartments which are within the rent-paying ability of the average family.

Since an analysis of wages, budgets, and building costs, shows that it is practically impossible for the average man to buy, build, or rent, a new four-room house or apartment, *the building industry must find a way of cutting costs if it desires to create new markets*.

Leonard P. Reaume, President of the National Association of Real Estate Boards believes that costs can be cut through the development of (1) more equitable taxation, (2) a reduction of financing costs for homes, (3) a more economic use of the land, and (4) some method of economic standardization of building processes, *so that homes for people of average means* can be constructed *at costs substantially lower* than are at present possible and that these homes at the same time can offer increased convenience and be developed without monotony of design.*

Financing plans, similar to those used in the automobile business, have been developed by several of the larger companies dealing in building materials. This "time-payment selling" will doubtless stimulate the sale of their own materials and expand the general market for new residential buildings, but only to a limited degree.

Economic Use of Land

In his communication to the National Building Survey Conference recently held in Chicago to consider the present slump in the building industry, Thomas S. Holden, Vice-President of the F. W. Dodge Corporation, in charge of building statistics, suggested that a solution might be found if architects were given a more active part in planning and supervising community layout. "In the past," he says, "unregulated private initiative has resulted in economic waste with adverse reaction on all business. The trend today in large commercial building projects and the highest grade of residential developments is toward a close cooperation of architects, contractors, real estate experts and owners in *advance planning*. Similar cooperation is lacking in most speculative residential work. Could not the American Institute of Architects, the National Association of Real Estate Boards, and the U. S. Chamber of Commerce, cooperate in calling series of local conferences of architects and realtors under the leader-

* "During the twelve months ending March 31, 1930, residential building contracts in the 37 eastern states have amounted to $1,700,000,000 compared with an annual average of $2,700,000,000 in the years 1925 through 1928. The slump has been mainly in apartments and housing development projects." This statement is made by Thomas S. Holden, Vice-President of the F. W. Dodge Corporation who goes on to say: "It is my belief that this extensive residential slump must have gone very far toward deflating whatever oversupply of residential building existed a year ago."

* *New York Times*, Sunday, April, 13, 1930.

ship of local chambers of commerce to investigate the problem of unsold houses and vacant apartments?

"*I believe these groups will find that architect-planned and—supervised residential developments sell better than private plan operations.*

The local conference should also consider the formation of a permanent organization of architects and realtors to conduct advanced research into housing needs, advance planning of community development, and the promotion of better standards of housing construction. Let us not forget that construction activity is the first step to increased employment and prosperity."

Such a procedure is of undoubted value, and when combined with low cost financing should increase the market for new residential buildings; but it can not reach the average man until construction costs are also cut.

Standardization of Building Processes

In speaking of this side of the problem, Mr. Reaume says: "There is no good reason why, if the problem is studied, we cannot develop a new technique in home building. More and more portions of buildings can be fabricated in factories so that a finished dwelling could be assembled in a few days instead of a few months."

Mr. Reaume expressed the hope that all the industries in the building process would some day see fit to establish a research bureau whose purpose would be to study technical ways and means for reducing the cost of home building.*

On the problem of reducing the cost of home building, Herbert Hoover has said, "the real solution probably lies in some *radical departure* in house construction and economics, as it does not appear to us that we are likely to have such relative readjustments as will correct this situation."†

It hardly seems necessary to add to the above statements. Housing costs can be materially lowered and the building market expanded far above its average for the last few years, provided the building industry as a whole ceases being, as Col. W. A. Starrett has called it, "the most disorganized major activity known to modern business, agriculture perhaps excepted,"‡ and aligns itself with modern industrial practice.

R. L. DAVISON.

* *New York Times*, Sunday, April 13, 1930.

† For discussion of this problem see the article on New Construction Methods, ARCHITECTURAL RECORD of October, 1929; articles in the March, 1930, issue of the ARCHITECTURAL RECORD.

‡ "Skyscrapers and the Men Who Build Them." Charles Scribners Sons, New York.

TWO EXPERIMENTS IN ARCHITECTURAL EDUCATION

The transition from the college drafting room to the office of an architect by the graduate in architecture is usually without guidance or plan for future development. What the graduate seeks is a job. What the office usually wants is a draftsman with experience; and usually there is no interest in his degrees, his specialized training, or his paraphernalia of honor awards. When placed as a draftsman, he survives the first week or month by his ability to draw, trace, letter, and construct details. Offices generally do not attempt in any way to supplement the college preparation received by the young draftsman. As a consequence of the diverse nature of architectural training in schools and the application of the training in the office, the young draftsman frequently finds himself unable to render useful service, and he is incapable of systematically advancing himself toward his future.

Mr. R. H. Shreve of the office of Shreve, Lamb and Harmon, recently pointed out:

There are many men to whom the step from technical preparation to actual business practice presents problems which they are not equipped to handle. It is most desirable that in this transfer there should be merely a modification of the surroundings without radical variation in the method of thought, the nature of the study, or the ambitious interest in the task. Instead, there is too often a hampering sense of a complete altering of direction and activity, with a loss of measure or progress and a failure of real accomplishment.

Experiments by two schools where architecture is taught have recently been tried. One graduate from the College of Architecture, Cornell University, is employed each year by the office of Shreve, Lamb and Harmon. Upon the student's completion of his course and his nomination by the college faculty, the student places himself under the direction of the office and accepts its advice as to the manner of his use of time. He is asked to conform to the established office usage.

For one year he is paid a salary sufficient to enable him to live decently and comfortably in or near the city of New York. He is encouraged to study the office work as he did his student work and to perfect himself as far as possible in the development of himself along the line of that aspect of his work in the College of Architecture considered to be best calculated to advance his special ability, aptitude, or interest, by supplementing the preparation he has already had as a student at Cornell University.

At the termination of one year of work with this office the student is free to make plans to work elsewhere as he wishes.

The choice of students is made without limitation from the various courses of the college (design, construction, or executive training).

At the present time, there are in the office of Shreve, Lamb and Harmon, three men who came there under this arrangement.

The University of Illinois provides graduate study in the field, at Lake Forest, Ill., to selected graduates in architecture and landscape architecture. It is considered that the architect as master-mind must call upon members of other professions to aid with any project. There is a clear necessity for collaboration between architect and city planner or landscape architect. The following is a quotation from a statement on the experiment:

Collaborative problems shall be undertaken by teams of one architect and one landscape architect, to be chosen by lot and in rotation. The problems shall be worked out without criticism. The use of reference material is permitted. The solutions must be done in collaboration, but each student shall make his own drawings.

On days when the weather is not suitable for outdoor study, a sketch problem may be given for all students, the subject to be in the field of architectural or landscape design or in any of the allied arts. The execution of these problems shall be individual.

Field studies shall consist of the observation of examples, and preparation of records in the shape of freehand sketches, measured plans and details, water colors, or any other drawing or notation suitable for presenting the subject. Each subject shall be, as far as possible, left to the students with the guidance of the Committee on Education and the Director.

At the completion of the summer school, a jury selected by the American Institute of Architects, the American Society of Landscape Architects, and a layman appointed by the trustees, judges the work of the students and selects one architect and one landscape architect to enjoy a year of study and travel abroad, the award being known as the Edward L. Ryerson Travelling Fellowship in Landscape Architecture. These two students travel and study together continuously, carrying out the idea of the foundation of collaboration between the two arts.

If the correct process for the making of an architect is by study at a recognized architectural school supplemented by practice and business experience with reputable architects, then the question arises, "Why should there not be a closer cooperation between schools and offices?" The experiments at the University of Illinois and at Cornell University suggest possibilities for attaining such cooperation.

A. Lawrence Kocher.

Ida. Galloway

SHALL THE "AUTOMOBILE GOD" OF DETROIT BE HELD IN CHECK BY THE "SKYSCRAPER GOD" OF NEW YORK?

TRAFFIC AND BUILDING ART

New York City and Cleveland Contrasted

BY HENRY-RUSSELL HITCHCOCK, JR.

Between the widely accepted truism that "New York is not America" and the patriotic statement, also widely accepted, that in the skyscraper America has developed a new, magnificent, and national form of architecture, there is a conflict of ideas that may throw some light on our architectural future.

Although much of the early history of the skyscraper derives from Chicago, this building type owes its mass development and its present essential form to the peculiar situation of New York. And while the skyscraper has spread to other cities—especially Chicago and San Francisco, which may perhaps on account of their metropolitan and cosmopolitan character be considered as included in the "New York" of the truism — in most cities both East and West it is a monstrosity, called into being for its publicity value and as an imitation of New York, but not as a necessary autochthonous development. So this very original and at times amazingly fine architectural development—to which even the supposedly imitative *Hochhaeuser* of Germany offer no real parallel—is American only in so far as "New York is America." Is all America to be New York? Or will it be something else?

We are forced to assume that transportation within cities (for airplanes with the exception of helicopters obviously affect only inter-city transportation) will remain indefinitely much as it appears to the layman today. And for the future of city architecture the question of traffic is very important: indeed the two are interwoven in an almost insoluble circular puzzle of cause and effect. Far from pretending to cut that circle and to build on primary data a utopian scheme, I here wish merely to indicate what will probably be the continuation of today's problem if it be intelligently controlled. For it seems more practical to take what exists and see what can be made of

it rather than to assume what has never been possible in the past, that a wholly new and theoretically perfect start may be expected in the future. Indeed it might well be held that any planning for the future must first accept and not deny the present.

•

In the New York of today, a city with an absolutely rigid plan, the extreme congestion within limited areas has made it virtually impossible to consider the automobile as a practical means of individual transportation; even the taxicab is becoming increasingly useless despite its lowering fare. A certain amount of automobile traffic across town is still practical but as the areas fill up that were left behind in the early advance of skyscrapers and high apartments, the high pressure on the present congested areas is not only rapidly intensified but also spread. As a result new means of cross-town rapid transit are already needed. In the largest and richest city in the modern world, over large areas travel by foot has again become the quickest means of getting about. Moreover, there is no probability of a change. In New York the future holds but the promise of a further spread of the superpopulated zones, with perhaps the alleviation of some regional clarification arranging certain interdependent zones within walking distance of one another, and developing a more complete spiderweb subway system for more distant travel.

But skyscrapers, it is generally accepted, exist fully as architecture only when they stand as single towers or may be seen from a certain distance. There is no architecture in three dimensions for a man who stands in a street that is completely lined with very tall buildings, however impressive in themselves such canyons may be. Except along parks, of which New York has disgracefully few, or from strategically placed upper story windows, there is no chance to see the skyscraper as three-dimensional architecture. The much vaunted skyline is seen with too much difficulty and from too great a distance to tell as more than a splendid silhouette: as an architectural *Stadtbild* it quite lacks plasticity. The casual and picturesque views from street corners depend far more on the position of the beholder than on the building seen. The stunning city pictures in the book *America*, compiled by Erich Mendelsohn, depend almost entirely on the skill of the photographers whose views he used; for the buildings in themselves were usually exceedingly poor. The great sin of the Paramount Building is its complete visibility: that is, its complete failure to take advantage of an unusually advantageous position; well hidden it might have provided occasional effective partial views. Leaving out of account the artist in the spectator, who, as the paintings of Edward Hopper show, can accomplish beautiful effects with the most unpromising buildings, the ordinary building of New York is thus reduced to the lining of streets at the level from which they are ordinarily seen. The art of the shop-front consequently becomes what it has by some intelligent designers long been felt to be, something quite separate, and detailed as design, from the masses about whose base it skirts. But that is the only building art which can expect much practice in the immediate future in New York. Even a fine building such as the Shelton, originally designed as a separate monument, has already become hedged in; and no doubt within a very short time even the aloof splendor of the Telephone Building will be spoiled. Except from certain distant points, the competing Transportation Building has been all but the ruin of the Woolworth Building.

Only monuments which can retain the supreme and peculiarly New York luxury of being low, such as the Morgan offices, the Public Library, the Grand Central Station (which is already finding it too expensive), or churches, can hope by means of an emphasis the reverse of that used in the past, to tell as independent works of architecture. But the architectural problem of making the most of such opportunities has scarcely ever been thought of. All the buildings of this type have been designed as if they were located like the Metropolitan Museum in a park, or surrounded by buildings of smaller scale as in the past. The emphasis of contrast has only been felt by the inversion of the traditional relation.

So at the very time that a transportational millenium is at hand, when, owing to high family wages, to low original prices, and to installment buying, a large proportion of all employed families might easily have an automobile of their own, this former convenience becomes for the New Yorker as useless, although admittedly as decorative an extravagance, as jewelry. It is sad to have to think that the art of window dressing, and the art of the effective use of occasional luxurious voids between the skyscraper walls, may encompass the future of megalopolitan architecture. Fortunately outside

FIFTH AVENUE

"In the largest and richest city in the modern world, over large areas travel by foot has again become the quickest means of getting about." In New York the future may bring the formation of certain interdependent zones within walking distance of one another, with a more complete spider-web subway for more distant travel

New York the picture still appears less gloomy both as regards the automobile and as regards architecture.

In Cleveland the business district is small, rather solidly and evenly built up, and quite sharply circumscribed. Within it the buildings are in the main what would have been called skyscrapers a generation ago, although today they appear merely as very ordinary large buildings of the size and type found most practical for offices and stores. Among these are several real skyscrapers. One is very fine in the current New York formula—the Telephone Building; another, in the New York formula of before the war, the Union Station Tower, is said to be the second tallest in the world, but does not seem to rank so high in design. Both of these monuments are obvious bids for publicity.

Immediately beyond the last high buildings on the two sides in which the city is expanding, a sharp line, presumably controlled by zoning, separates the downtown district from a region of garages. There is even open parking spaces within easy walking distance of downtown. On the other two sides of the center there lie, respectively, the railroad-bordered lake and the factory district. Beyond the region of garages and parking space begins what in the East could be considered the suburbs; but here it is all Cleveland for miles and miles; and in all this surrounding area—by what realtors' feats, by what zoning miracles this was established I cannot say—there exist only occasional and widely separated

Photo, Galloway

FIFTH AVENUE

A wide street has value only when the main business and social institutions to which people flock at regular hours are sufficiently separated so that the different crowds do not become involved with one another, and the street serves one main stream at a time. The Cleveland city plan suggests a solution: The business center is tightly self-contained; immediately outside is an area of low land values permitting garages; recreational centers are spread out at some distance from one another, and reached by arterial traffic

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FORTY YEARS AGO: THE SAME SECTION

The city has grown; the traffic has changed; but the streets are nearly the same.

Nevertheless the example of Cleveland suggests that zoning may do much to make conditions tolerable. With city zoning must go the study of the *group planning of buildings*. "After our inebriation over the skyscraper, this is a sobering thought"

tall buildings. Across this suburban city, automobile through-traffic can speed along the cascade-lighted* Carnegie Road while local automobile traffic is served by the American gridiron which follows out on either side of Euclid Avenue. Yet in this suburban city area are found the hotels, restaurants, clubs, dance halls, libraries, schools, museums, and more and more theatres and small stores—all the attendant paraphernalia of the large city which serve not only this area but the whole city, and which have become so unapproachable in the traffic conditions of central New York City. Of course, New York has similar suburbs, but here the suburbs are the city. The prevailing low suburban buildings, with only isolated tall ones, make congestion impossible; and all of these institutions may be reached freely at any time either by automobile or by the Euclid Avenue street cars.

Further out, just before Wade Park, is a sort of uptown nucleus with buildings not very high or close together, chiefly resident hotels, churches, and theatres. Beyond the Park, still not more than half an hour's drive from the business district, begin the residential suburbs of all classes, from the palace-lined Lake Shore drive to the Van Sweringen developments with their pathetic detached villas alternately English and Colonial. These further and cheaper suburbs, although at some distance from the city center, are accessible in about three quarters of an hour by automobile or by a special rapid-transit line.

Thus despite its great expansion the city plan of Cleveland becomes in principle very much like that of European cities which have been perhaps more successful than those of Eastern America in their adaptation to the automobile. The separate social institutions to which the people of a large city crowd at regular hours, such as the theatres, restaurants, schools, and libraries, are kept sufficiently separated to make it possible to get to each without becoming involved in the crowd going to the others; and once arrived it is frequently even possible to park within the same block. And in the placing of residence districts it has been realized that it is not geographical but temporal proximity that counts, and even

*That is, the control lights are so timed that once past one green light the motorist, if he keeps a definite rate of speed, continues to meet only green lights.

that the ease and the predictability of the length of the trip from home to office are more important than its actual length either in distance or in time.

Now if business districts can be made as tightly self-contained as in Cleveland by zoning, and if immediately outside them low land values

Photo. Galloway

can permit the existence of garages and even of parking places; if recreational buildings can be spread out and placed at some distance from one another in the suburban city district through which arterial traffic is permitted to pass rapidly, there naturally follow certain very definite effects upon building in general, and specifically upon architecture. Obviously within the constricted business district the worst New York conditions will prevail. The buildings will be put up and pulled down in response to economic pressure almost as rapidly as the temporary office partitions which are changed to suit new tenants. At the bottom of the street canyons in which no one need spend more than five or ten minutes between office or store and garage or parking space, the shop-front linings will be nearly as evanescent and let us hope as lively as the sets of a stage. This is not an ideal solution, but it is a practical one, toward which, in New York particularly, we seem well on our way. It is too ever-changing a picture to cheer the heart of architectural utopists who have ever, and rightly, dreamed of permanence.

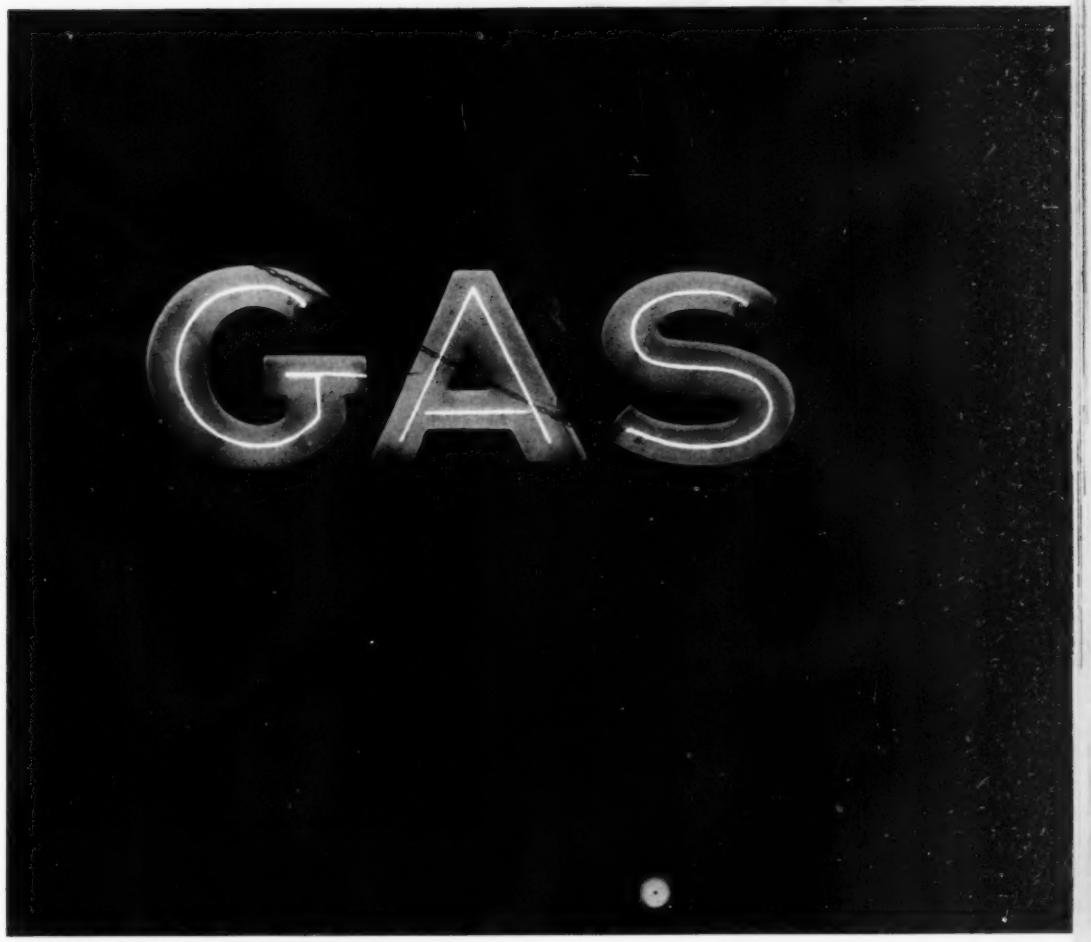
But in the suburban districts outside this central city it becomes possible to make buildings which shall be more than the evanescent linings of canyons, and which may tell by their masses at human scale either as separate works of architecture or as masses related intelligently to their neighbors in some larger scheme.

The apartment has provided one means of bringing order and large scale to many dwellings. It is desirable that further attempts be made in the direction of bringing similar order and large scale to small dwellings which lie side by side, since outside New York these seem destined to dominate. At present the lines of shallowly individual and "correct" villas with their silly variety and their lack of insulation too often monotonize both inexpensive suburbs such as Shaker Heights, and some expensive ones, such as Cleveland Heights.

The two fields in which a consideration of Cleveland leads one to hope for the future monuments of American architecture are just those in which the whole past of Western European architecture, even down through the Second Empire work of the Baron Haussman in Paris, has excelled, and in which contemporary European architecture has also shown both skill and success. These are the fields of city zoning and of group planning. After our inebriation over the skyscraper, this is a somewhat sobering thought, but we can hardly be willing as a whole nation to sacrifice the cult of the Auto-

Photo. Galloway

mobile God of Detroit to the Engineering God of New York. Therefore, as opposed to the single-minded pursuit of the will-o'-the-wisp of the skyscraper the increasing study of modern European work by American architects seems more than justified.



Courtesy Walker and Co., Detroit

THE ARCHITECTURAL RECORD: JUNE, 1930
TECHNICAL NEWS AND RESEARCH

THE GASOLINE FILLING AND SERVICE STATION

A STUDY BY K. LÖNBERG-HOLM

NEXT MONTH: Making Buildings Rain-tight; also, Theatre Auditorium Planning, Lighting, Acoustics, and Construction.

to. Fairchild Aerial Surveys, Inc.

ourtesy E. I. du Pont de Nemours Co.

ourtesy Standard Steel Works, Kansas City

Characteristic forms, easily read. (See text, page 564). Tanks and stations are links in one chain. Why not apply the principles of tank design to the station? Clear definition of function. Economy of form and material.

Photo. Underwood and Underwood

"Land traffic, air traffic, and water traffic, present individual fuelling problems"

THE GASOLINE FILLING AND SERVICE STATION

BY K. LÖNBERG-HOLM

Functions

The gasoline filling and service station serves two distinctly different functions:

1. *Distribution of fuel for traffic instruments, powered with gasoline engines.*
2. *Upkeep and repair of these instruments.*

Land traffic, water traffic and air traffic present individual fuelling problems. This study deals with stations for land traffic.

Determinants

The gasoline filling and service station is a commercial enterprise. The income-producing capacity of the station is determined by:

1. *The products sold.*
2. *Efficiency of operation.*
3. *Cost of construction, maintenance, and operation.*
4. *Relations to the driver who buys the fuel and the repair service.*
5. *Relations to the community of which the station is an integral part.*

Designing a station is a problem of organizing a structure to meet the following demands:

1. *Maximum appeal to the driver.*
2. *Maximum ease, certainty, and safety of operation.*
3. *Minimum cost of construction, maintenance, and operation.*
4. *Maximum plastic unity of the basic units.*
5. *Maximum organic relation to the community.*

Mr. Arthur Brace of the Tide Water Oil Company's Construction Engineering Department, Mr. Raymond Browe of the Standard Oil Company of New York's Construction Engineering Department, and Mr. Robert L. Zahour of the Westinghouse Lamp Company's Research Department, have been consulted in the preparation of this paper.

The often conflicting interests of commerce and community. A chaos of competitive advertising, and false conformity of buildings.

Existing stations reflect the often conflicting interests of commerce and community. Crude competitive advertising has violated community interests. Greek sheet-metal temples, Dutch windmills, Chinese pagodas, miniature French castles, and dreams of Spain and England, have been scattered generously along streets and highways. The latest trend in station design shows a reaction that apparently has checked the worst offenses. Some companies have adopted designs that are but slightly different from adjoining residential or ecclesiastical architecture. The mechanical equipment has been concealed for the benefit of forced *plastic uniformity*. The doubtful value of these structures is the purely negative quality that they don't offend. But they have lost their individual character. They have not been permitted to be what they are.

A community is a sum of conflicting interests organized to a unity. *The architectural merit, i.e., the plastic value of a community, depends upon the easily perceived differentiation between the basic functions. They should be easily read. The home, the school, the city hall, the factory and the filling station should be clearly recognized. The desired plastic unity is a final result of a clearly formulated program and rational use of material, form and color.*

TYPES

The stations can be divided into types according to ownership and operation, or according to the kinds of service they sell. Using the first differentiation there are the following main groups:

1. *Stations built and operated by oil companies.*

These stations are built to serve one manufacturer and therefore do not include sale of tires and tire-repair service.

2. *Stations built by oil companies and leased to operating companies or to individual operators.*

The leasing of stations to operators instead of running them with company personnel has been adopted by some oil companies. These companies have organized station-operating companies that in turn lease out the stations to individual operators. Each company maintains two or three company-operated stations to obtain retail price schedules. The advantages of this method are:

(a) decreased overhead.
(b) increased personal interest of the operator in the sale.
(c) More complete service for the driver by adding sale and repair of tires.

3. *Stations built by operating companies or by individual operators, and operated by them.*
4. *Stations built by building corporations, cooperative associations, or communities*, leased to operators or oil companies, or operated by the owner.

Arranging the stations according to the number of intended functions we get a number of overlapping groups, ranging from the isolated pump, attached to a way-side refreshment stand, to the "super-service" or

"one-stop station" planned for complete service: filling, greasing, lubricating, battery service, washing, repair and sale of tires and accessories. Among the elaborate stations are those combined with hotel or camping accommodations, stations connected with stores or bus terminals, and stations planned as centers for future community developments.

Location

The location of the station is governed by the class of trade desired—whether resident, transient, or both.

1. *Commercial considerations.*

The location should be governed by a survey of existing and expected traffic and the number of resident cars in the neighborhood. Among stations in residential districts the greater part of the sale is to resident trade. Wide, well paved and well travelled streets are preferable to narrow and unpaved ones. The side of the heaviest traffic is more productive of business. Intersecting streets usually furnish good sites. The location of traffic beacons must be taken into consideration. The entrance to the station should be at the corner where the heavier traffic is stopped by the signal. Inside lots are good in residential districts, but must contain ample area for approach and roomy drives. Corner lots have the advantage of being easily seen from a distance, are rapid in handling of business, and usually permit arranging the building and drives so that the pumps are accessible from either street. The grade is important. The pitch to the street must not be too great. Relation to competing stations and possibilities for future expansion of the station must be considered.

2. *Community considerations.*

The community plan should provide space for filling and service stations in connection with shopping centers, recreation centers, business centers, etc. Ample parking space should be provided. The customers should be able to leave their cars for filling and overhauling while they do their shopping.

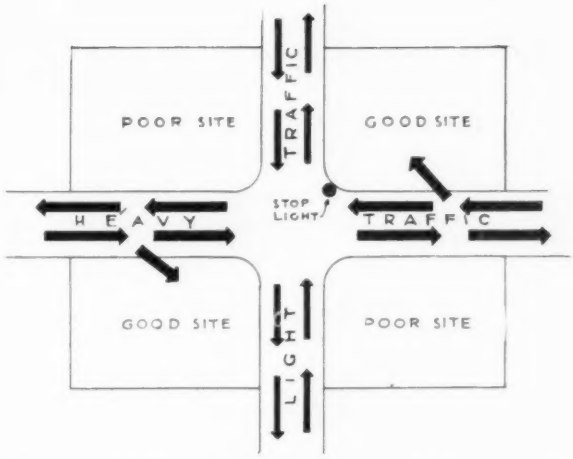
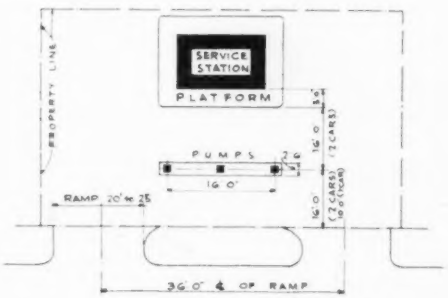


Diagram showing how the relative value of corner sites is determined by the traffic beacon. The station should be at the corner where the heavy traffic is stopped by the signal

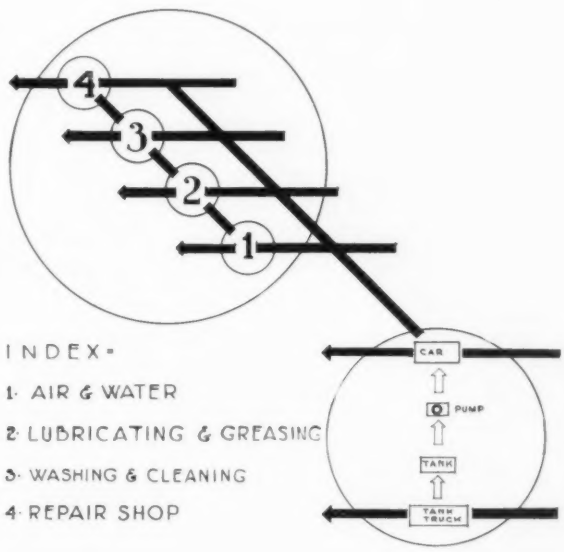


Layout showing minimum required dimensions

Layout

The layout of the station should insure separate handling of each operation. The basic units should be organized in the following sequence:

1. *Means of access and exit: ramps and driveways.*
2. *Means of sale of gas: tanks, pumps, and sales room.*
3. *Means of upkeep and repair: pits, lifts, repair shop, parking space, air towers, water stations.*
4. *Toilets, rest rooms, and storage.*
5. *Signs and exterior lighting.*



Operation Chart.

Filling and service operations should be clearly separated.

Ramps, Driveways and Yard

1. *Layout.*

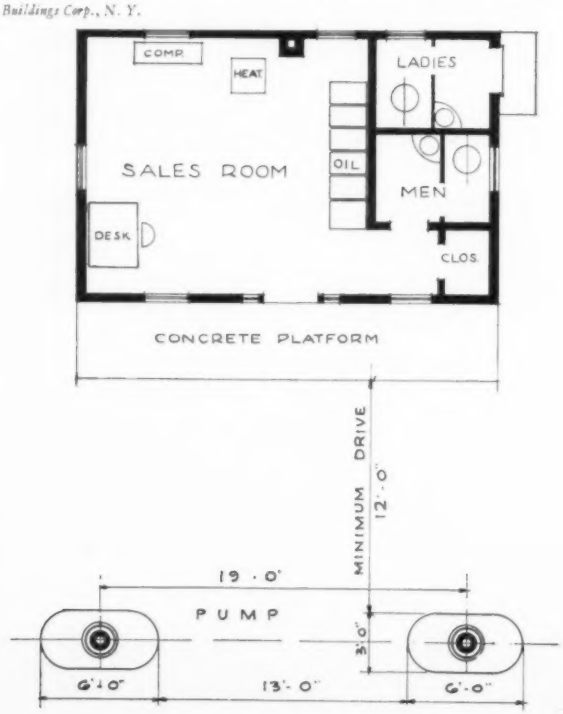
The ramps are the entrances to the station. They should easily absorb the moving traffic. Sharp turns should be avoided. The width should be not less than 20 feet (the width is usually restricted by local codes). The driveways should be laid out according to a traffic diagram that insures a minimum of interference by

MOTOR CAR DIMENSIONS, 1930

MAKE	*(L.)	*(W.B.)	*(F.)	*(R.)	*(W.)	*(H.)	*(C.)	*(T.D.)
Ford A	12′–11¼″	103½″	21¼″	30½″	5′–7″	6′–0¼″	12⅜″	34′–0″
Whippet 98A	13′–2⅜″	112½″	18¼″	27⅝″	5′–7½″	5′–10½″	12″	44′–0″
Chevrolet AC	13′–5″	106½″	24″	30½″	5′–6½″	5′–11⅝″	11½″	41′–2″
Erskine 52	13′–5½″	109″	22½″	30″	5′–5″	5′–8 9/16″	11″	36′–0″
Pontiac	13′–11″	110″	23″	34″	5′–10″	5′–10″	12¾″	39′–2″
Essex D	14′–0″	110½″	23″	34½″	5′–4	5′–10½″	12″	45′–2″
Plymouth	14′–1″	——	24″	35″	5′–7″	6′–1″	12½″	——
De Soto	14′–1″	——	24″	35″	5′–7″	6′–0″	12¾″	——
Oldsmobile	14′–1⅝″	113″	21⅝″	35″	5′–9″	5′–10″	12¼″	41′–6″
Roosevelt S	14′–3⅞″	112¾″	22¼″	36⅞″	5′–8¼″	5′–10¼″	11½″	35′–8″
Dodge Six	14′–4″	112″	25″	35″	5′–6½″	5′–11½″	12¼″	42′–0¼″
Marquette 30	14′–5 3/16″	113½″	22½″	37 3/16″	5′–9½″	5′–9⅜″	11 5/32″	38′–7″
Oakland 6-212	14′–7″	117″	23″	25″	5′–11¼″	5′–11″	12″	40′–0″
Marmon 68	14′–8¾″	114″	24½″	36¼″	5′–8¾″	5′–10¼″	11″	38′–0″
Studebaker FC	14′–9⅜″	115″	23 3/16″	39 3/16″	5′–9¼″	5′–9 7/16″	11 3/16″	39′–1″
Graham-Paige 612	14′–10″	112″	23″	36″	5′–8″	5′–10½″	12″	40′–6″
Dodge Senior	15′–2″	120″	25″	37″	5′–9⅛″	6′–0⅜″	11¾″	47′–4″
Chrysler 66	15′–2″	——	28″	36″	5′–9¼″	5′–11″	11½″	40′–0″
Marmon 78	15′–4″	120″	24⅝″	39⅜″	5′–8¼″	5′–10¼″	11″	42′–0″
Buick 40	15′–4⅛″	118″	24¾″	41⅜″	5′–10⅜″	5′–11¾″	10⅛″	39′–6″
Willys-Knight 66B	15′–5″	120″	23¼″	41¾″	5′–10″	6′–3 3/16″ ✓	9½″	41′–7″
Ruxton	15′–7½″	130″	23″	34½″	6′–0″	5′–3″	10¾″	38′–0″
Viking	15′–8″	125″	24″	39″	5′–10″	6′–0″	12½″	47′–0″
Packard 626	15′–8 13/16″	127½″	24 5/16″	37″	5′–11⅞″	6′–0½″	9 9/16″	45′–2″
Hudson R	15′–9″	122″	28½″	38½″	6′–1″	5′–11	11½″	45′–9″
Chrysler 77	15′–9½″	——	28″	36″	5′–9¾″	6′–0″	12″	42′–0″
Auburn	15′–9 3/16″	130″	24¼″	35 5/16″	5′–10″	5′–10½″	9⅞″	40′–0″
Franklin 147	15′–10″	132″	26″	32″	5′–11″	6′–0″	11″	43′–0″
Cord L 29	16′–5″	137½″	20¼″	39 3/16″	6′–2″	5′–6″	13¼″	46′–1″
Lincoln	16′–7½″	136″	24″	39½″	5′–10″	6′–5″	14″	50′–5″
Pierce-Arrow 125	16′–8 1/16″	133″	26¼″	40 11/16″	5′–11⅜″	6′–0 11/16″	10″	45′–0″
Buick 60	16′–8⅜″	132″	25⅜″	43″	5′–11⅜″	6′–1½″	10 3/16″	45′–5″
Graham-Paige 837	16′–8½″	137″	27½″	36″	5′–10″	6′–2″	12″	47′–4″
LaSalle 340	16′–11″	134″	26″	43″	5′–11 1/16″	6′–1 3/16″	12″	49′–9″
Studebaker FE	17′–3⅞″	135″	27″	45⅞″	5′–9¼″	5′–11⅞″	11⅞″	49′–9″
Pierce-Arrow 126	17′–5 1/16″	143″	26¼″	40 13/16″	5′–11⅜″	6′–0 11/16″	10″	49′–0″
Packard 645	17′–6 7/16″	145½″	25⅝″	39 5/16″	5′–11⅞″	6′–0½″	9 5/16″	54′–8″
Cadillac 353	18′–8″	152″	27 13/16″	45¾″	6′–1″	6′–2¾″	12″	55′–8″

(*) NOTE: Information supplied by Automobile Manufacturers. Where makes are repeated, figures are for smallest and largest models. (L) length; (W.B.) wheel base; (F.) distance from center of front hub cap to front extremity; (R.) distance from center of rear hub cap to rear extremity; (W.) width; (H.) height; (C.) distance from ground to underside of running board; (T.D.) Turning Diameter (diameter of smallest walled-in circle in which the car will make a complete turn).

Courtesy Ramp Buildings Corp., N. Y.



Standard Layout for small filling station, Gilbert and Barker Manufacturing Co., Springfield, Mass.

cross-traffic. Traffic lines to pumps should be separated from traffic lines to the shop service. Parking space should be provided in connection with the service unit.

2. *Construction.*

Ramps, driveways, and yard, should be easily cleaned or re-dressed, and have a surface suitable for rubber tires. Concrete, asphalt, tarvia, and macadam, will serve the purpose. The Standard Oil Company of New York specifies:

Filling under drives and floors of buildings to be of good clean earth, stone, cinders, or gravel, well tamped and watered and placed in layers not over 12″ deep, each layer being thoroughly tamped and rolled. Any sod or soft spots in the subgrade are to be removed and replaced with suitable material. Cinder fill shall not be placed within six inches of any pipe or metal work.

Paving

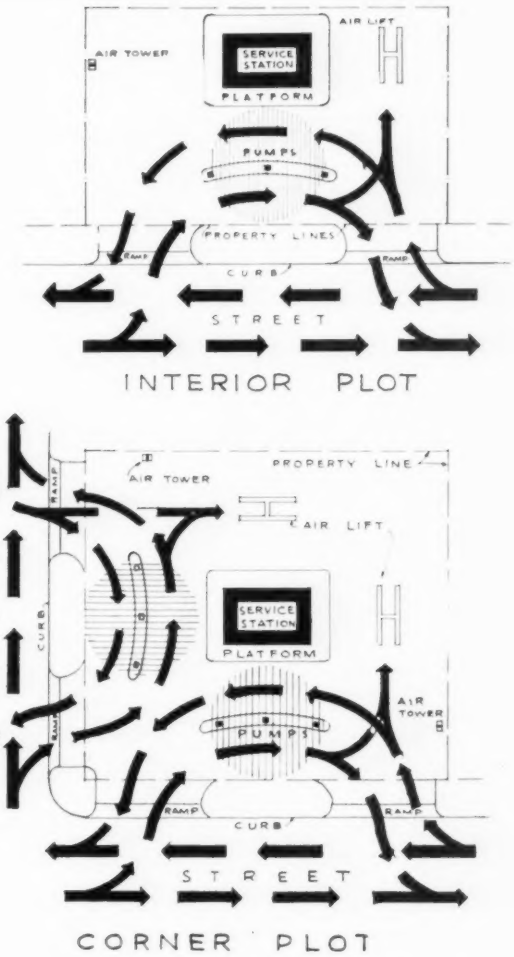
1. *Stone surfacing.*

Excavate or fill to a level eight inches below the finished paving grades with substantial earth shoulders at edges. Place a base course, six inches deep, of 2-inch to 3-inch trap rock, limestone, slag, or granite. Over this base course place an intermediate course two inches deep of the above material in ¾″ size. The finish course shall be screenings of the above material soaked with water. Each course shall be rolled with a power roller. The depth of the finished course shall be sufficient to bring the finished surfacing up to the required grades, without depressions in any portion.

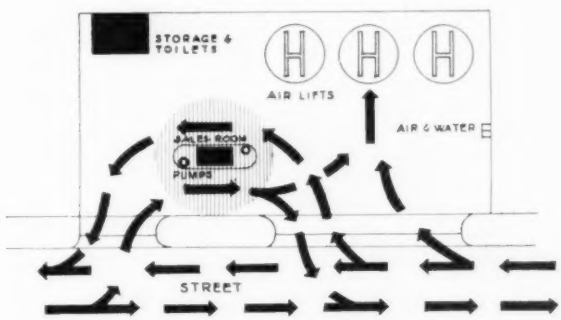
Note: In locations where stone is not readily obtainable and where cinder driveways are noted on the plot plan, the contractor may use cinders for the base course, with a 2-inch intermediate course of ¾-inch stone or slag. The filling and finish course shall be as above specified.

2. *Concrete paving.*

Excavate or fill to a level of 6 inches below the finished paving grades. Concrete paving shall be 6 inches thick of 1:2:4 Portland cement, clean sharp sand and trap rock or gravel to pass a 1½-inch ring. Paving shall have mesh reinforcing, placed 2 inches from top. Paving shall be divided into squares about 20 feet each way with ½-inch expansion joints filled with Socony asphalt. The stone aggregate shall be struck below the surface and the finishing done with a wood float and left free from depressions. Paving shall be kept wet for three days. Cement walks (not used for vehicles) shall be 4 inches thick, of 1:2:4 concrete not reinforced and steel trowel finished with ½ inch of 1:1:1 (cement, sand and No. 2 grit) mortar.

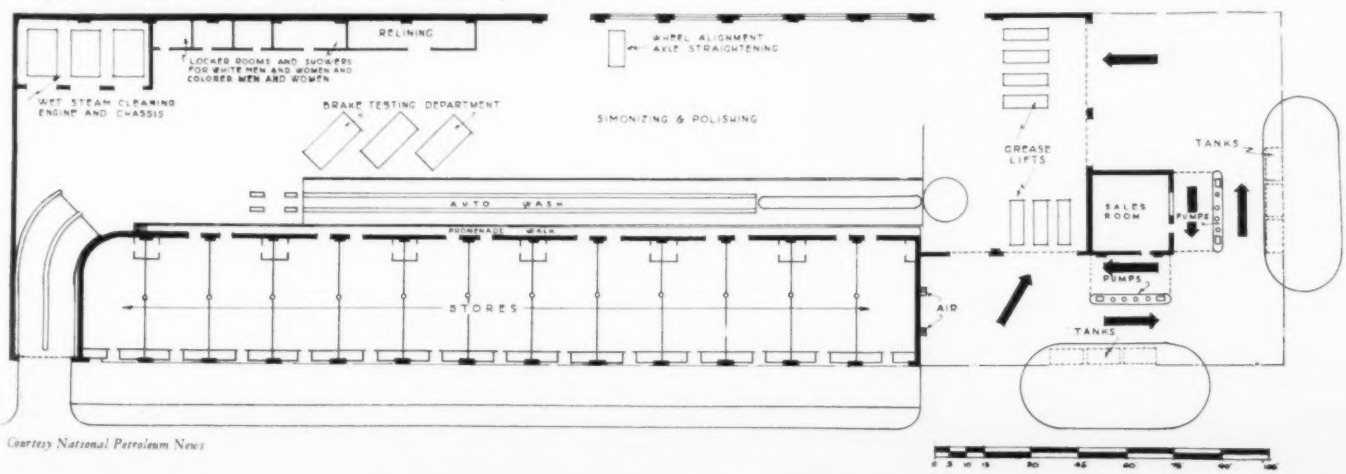


Layout for small station on interior plot and on corner plot. Prepared by Arthur Brace of the Tide Water Oil Company.

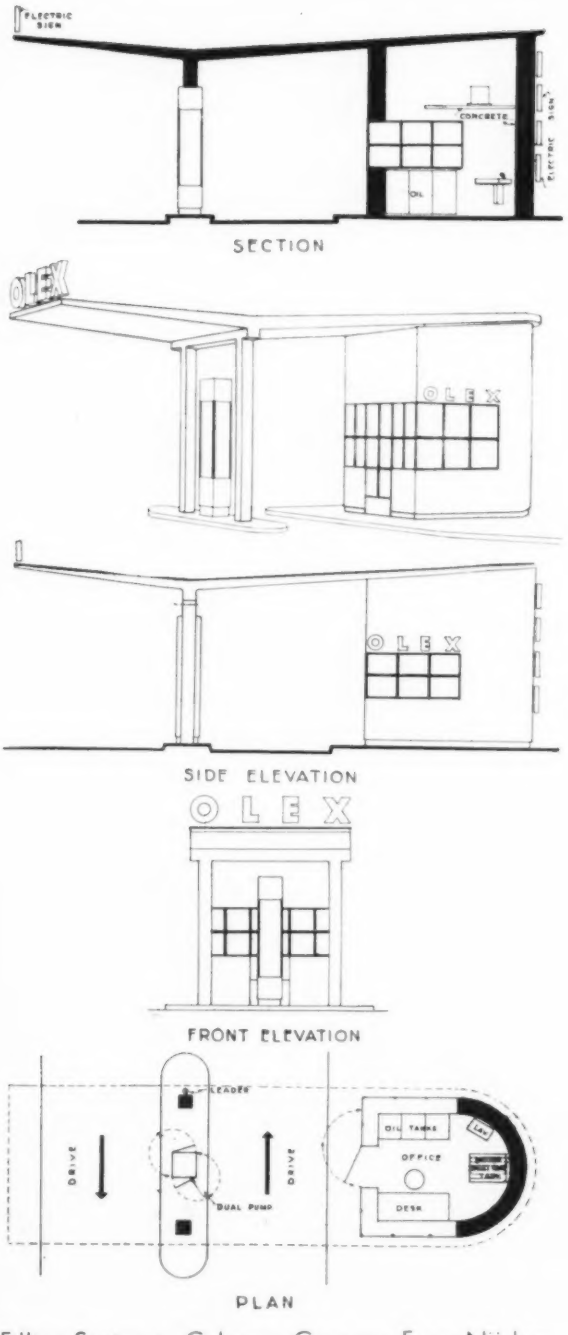


Layout for a small station with the salesroom placed on the pump island. (See text, page 570).

Proposed station of Super Service Stations, Inc.



Courtesy National Petroleum News



Filling Station in Cologne, Germany; Franz Nöcker, Architect.

Tanks

1. *Location.*

The location and method of construction of the gasoline storage tanks is in most cases restricted by the local codes. Because of the explosive and inflammable character of the gasoline, the tanks should be underground. The intake should be placed in such a way that the unloading tank truck will not block the operation of the station. The speed of the dumping is influenced by the distance from tank to truck. The tank should be as close to the pumps as possible to reduce the amount of piping and the pull in pumping gas from tank to pump. Future expansion of the station should be considered.

2. *Capacity and number of tanks*

Depend upon the expected gallonage and the size of haul of the tank truck. One separate tank should be placed for each grade of gasoline. The size of the tanks varies between 500 and 3,000 gallons. There is a decided trend to increase the size of the tanks. Large tanks mean quick dumping, and reduced delivery and storage cost.

3. *Installation.*

The tanks should be placed on solid ground or on concrete. The New York code requires that a concrete slab be placed around the tank. Clean earth should be packed all around and on top. Cinders should not be used, because they cause corrosion. Location and height of the vent pipe is determined by code requirements. If possible, the tank should *not* be placed under concrete driveways, to avoid the need of breaking up concrete in case of repair. A manhole should be provided for easy access to the check and foot valves.

Pumps

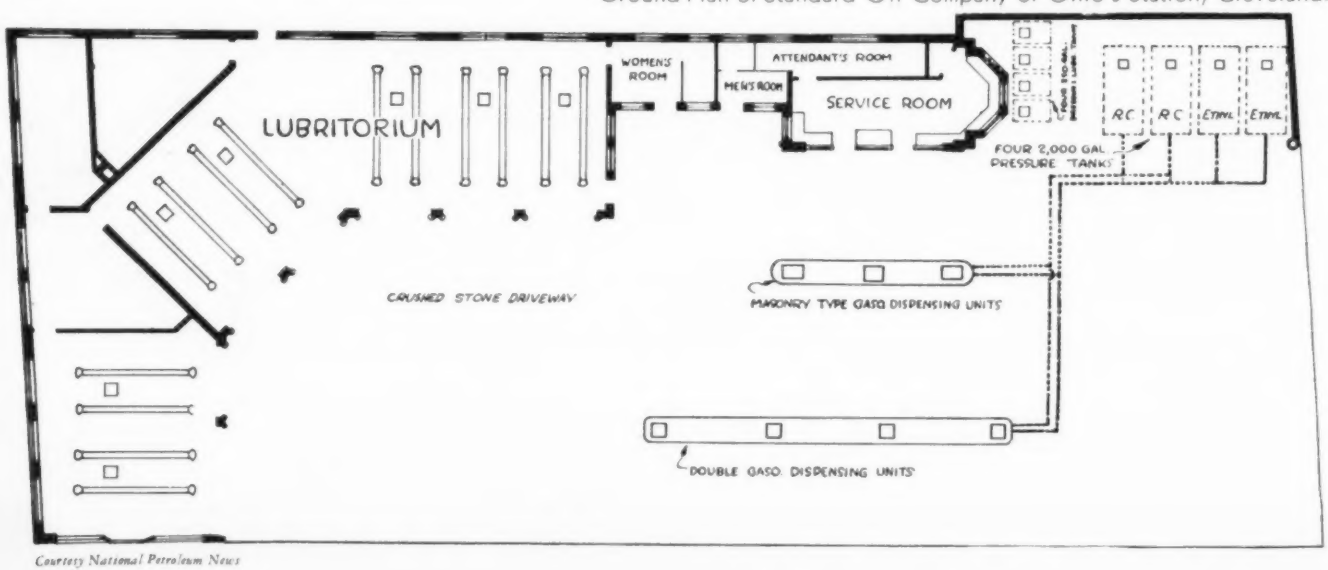
1. *Location.*

Pump accessibility is the most important factor to be considered in the layout of the station. The driveways should give a direct approach from street to pumps.

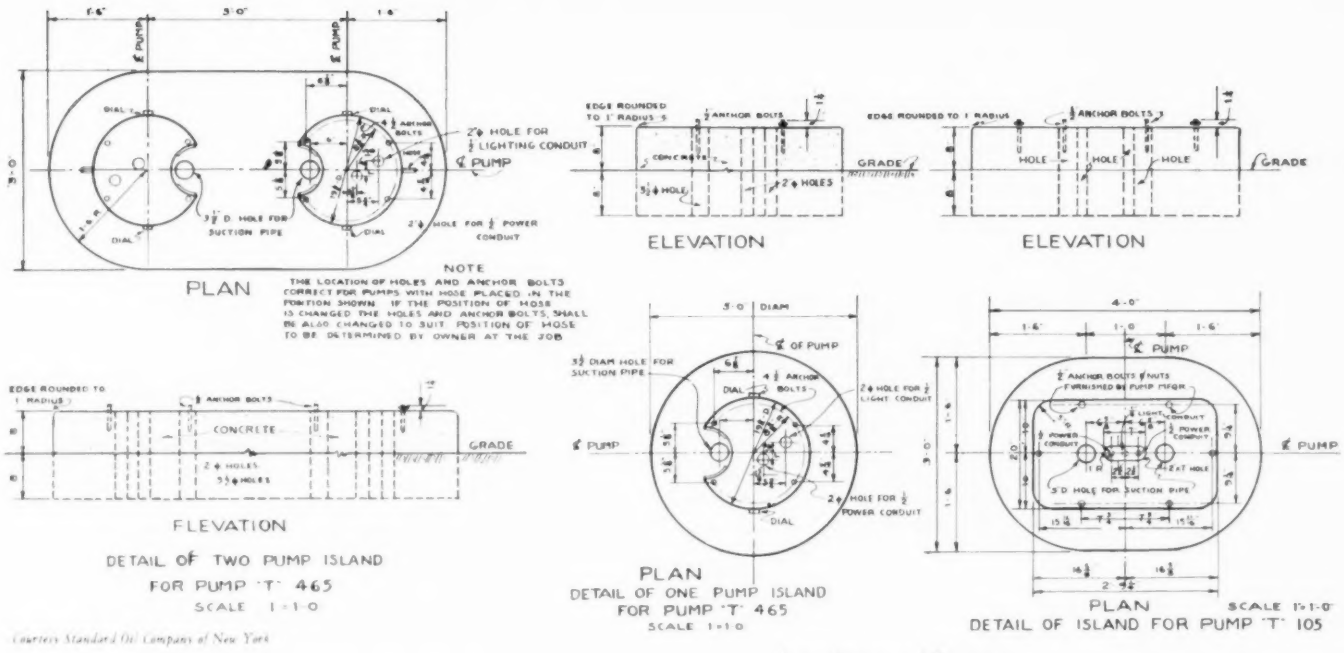
2. *Number, types, capacity.*

One bank of pumps serving two driveways should

Ground Plan of Standard Oil Company of Ohio's Station, Cleveland.



Courtesy National Petroleum News


PLAN
NOTE
THE LOCATION OF HOLES AND ANCHOR BOLTS CORRECT FOR PUMPS WITH HOSE PLACED IN THE POSITION SHOWN. IF THE POSITION OF HOSE IS CHANGED THE HOLES AND ANCHOR BOLTS SHALL BE ALSO CHANGED TO SUIT. POSITION OF HOSE TO BE DETERMINED BY OWNER AT THE JOB
ELEVATION
ELEVATION
ELEVATION
DETAIL OF TWO PUMP ISLAND FOR PUMP "T" 465 SCALE 1-1-0
PLAN
DETAIL OF ONE PUMP ISLAND FOR PUMP "T" 465 SCALE 1-1-0
PLAN
DETAIL OF ISLAND FOR PUMP "T" 105 SCALE 1-1-0

Courtesy Standard Oil Company of New York

Installation of Pumps.
"All corners should be rounded." (See text, 578.)

contain at least three separate pumps or two tandem pumps, providing two outlets for ordinary gas and one or two outlets for high grade gas.

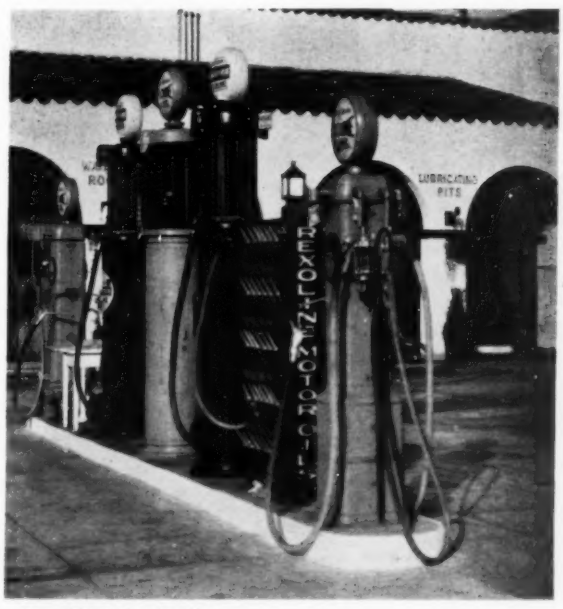
Pumps are either hand-operated, air-operated (with air pressure applied to the tank) or motor-operated (with individual motors or with a central pump station). The pumps are made with single or double discharge (discharge to two sides or for two brands of gasoline), or with four discharges with a corresponding number of meters. The capacity of the pumps varies from one of 7 to 8 gallons per minute for hand-operated pumps to one of 15 to 20 gallons per minute for motor-operated pumps.

3. *Installation.*

The pumps should be placed on concrete islands not less than 6 inches high to prevent danger of collision. All edges should be rounded. Where the space is limited, the islands should follow the curve of the driveways. Oil racks or oil pumps with underground storage tanks are often placed on the islands with the pumps. Clear organization of the visible equipment is essential. The pump islands are the display and deal counters of the station. The form and colors should be organized accordingly.

4. *Canopies.*

Canopies over islands and driveways are used as protection from rain and sun. The columns carrying the canopy should be as slender as possible and without projecting base so as not to obstruct the operation or the visibility. The canopy itself should therefore be constructed of the lightest materials, and possibly be hung from a taller structure. The clear height under the canopy should be not less than 9 feet for the driveways. Open driveways should be provided for tall trucks.



Courtesy National Petroleum News

"The pump island is the display and deal counter of the station."

Salesroom, Rest Rooms, Toilets, Storage

1. *Layout.*

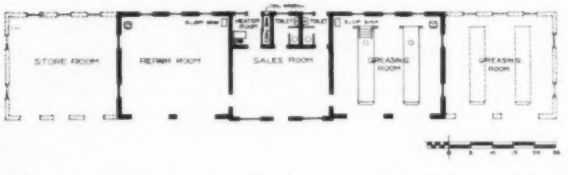
These spaces are usually enclosed in one structure. The entirely distinct functions and requirements of each

Standard Oil Co. of New York, standard stations
1. Colonial wood station in a natural setting

2. Colonial metal station among firewalls

3. Colonial wood station with covered grease pit

The clear and characteristic forms of the visible mechanical equipment: pumps and floodlights are "right" in any surroundings. The architecturally "styled" building becomes an obvious stage-setting when removed from its "natural" environment.



The stations can easily be expanded by adding greasing rooms, repair room, and store room.

of these units might in many cases justify a clear division in the layout. A possible increase in the initial construction cost would be offset by increased efficiency and convenience.

A. SALESROOM. The salesroom serves primarily as an office for the pump operator. It should be located as close to the pumps as possible and should afford an unobstructed view over the pump islands and driveways. The walls should therefore have a maximum of glass area, with the heights determined by the sightlines from the operator's desk. When the salesroom is placed in a single building with the toilets and storage, and placed at the side of the driveway, the operator must cross the traffic to reach the pumps, and again to get back to the cash register. For stations with a continuous sale of gasoline, it might therefore be of advantage to place the salesroom on the pump-island—one salesroom for a group of islands, or one for each island, depending on the number of operators. The toilets and storage can be removed from the vicinity of the driveways. The salesroom should have space for at least the following equipment:

One small steel desk, cash register and safe, one chair, oil rack, display shelf for oil and accessories, and a can for used rags. Telephone, ice water tank, kerosene tank, and lavatory, are often included.

The doors should be located to insure minimum travel from desk to pumps. The size of the salesroom varies with the type of station and the number of operators. Sale of accessories and tires demands increased display space.

B. TOILETS. Toilet facilities included in the station vary from one single toilet for operator and customers in the small city stations to separate toilets for operators and male and female customers, and spacious rest rooms, in the larger types. The toilets should be removed from the driveways to insure maximum privacy. Easy accessibility is important. The entrance to the men's and women's toilets should be separated—if necessary with screens. Doors and windows should not face the driveways, or the working spaces. Abundant natural light should be provided. The toilets should be thoroughly ventilated. Glass should be opaque.

C. STORAGE. Space should be provided for storage of loose equipment, for heating plant, air compressor, and lockers for the operators. This space can be connected with the toilets or with the covered lubrication or repair shop.

2. *Construction.* (See "New Construction Methods," ARCHITECTURAL RECORD, October 1929): The construction should be governed by:

1. *Specific function.*
2. *Initial cost.*
3. *Time of erection.*
4. *Cost of maintenance and cleaning.*
5. *Fire resistance, permanency, flexibility.*
6. *Climatic conditions.*
7. *Local codes.*

Courtesy National Petroleum News

Light, easily erected structures. Rational use of materials. The two stations shown on this page do not pretend to be anything but filling stations. They are good solutions of the specific problem—far surpassing any superficial "architectural styling."

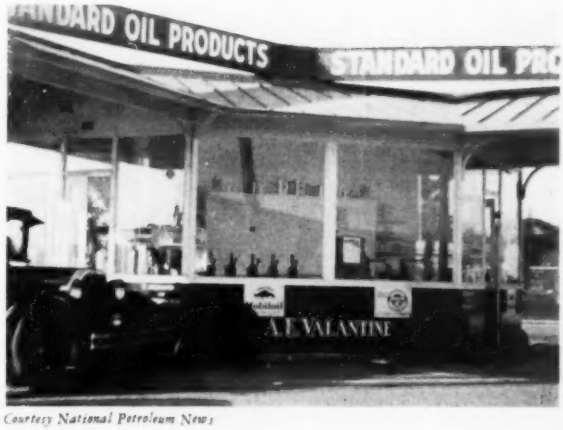
Although a great number of existing stations are built as chain stations and are standard in design, little has been done to develop factory-built units that would satisfy the demand of economy, comfort, and appearance. Sectional steel buildings are on the market, but they have mostly been limited to imitations of stone and wood structures. The advantages of manufactured buildings would be:

1. *Low cost.*
2. *Shorter erection time.*
3. *Higher grade materials and workmanship.*
4. *Elimination of different field contractors.*

(One oil company found that an initial saving in construction cost of $1,000 per station by the use of steel angle frame construction and metal lath and stucco instead of brick and half timber was neutralized, and the actual cost increased, by delay in the field work caused by the larger number of contractors.)

In order to obtain an effective saving, all mechanical fixtures should be installed in the factory. The use of light metals, high grade insulation, or aerated clay products, would cut down the cost of transportation. The varying code requirements, especially in regard to plumbing, are obstacles that must be overcome. Standardized manufactured units should be as "impersonal" in form as the mechanical equipment. All "architectural styling" should be avoided. A standardized design that may seem superficially to "fit" into a rural community becomes a stage setting when it is placed on a city lot between two fire walls. (Illustrations, page 570.)

The cleanliness of the station is equally important for efficient operation and for appearance, and the station should therefore be easily cleaned. Inaccessible spaces should be avoided. All surfaces liable to soiling



Courtesy National Petroleum News

Courtesy National Petroleum News

Curved Grease Pit. The cave below the inside arc provides room for tools and oil tanks under pressure. Steam radiator and light fixtures are visible inside the outer wall. The lift for relaxing springs is overhead.

should be exposed to view. All corners should be rounded, and exposed corners protected with guards. Doors and windows should not open over the driveways. Abundant natural light should be provided.

Pits, Lifts, Repair Shop

1. *Location.*

Pits and lifts for greasing, lubricating, and washing, and space for repair and parking, should be separated from the pump islands. Access and exit should not obstruct the pump accessibility.

2. *Construction.*

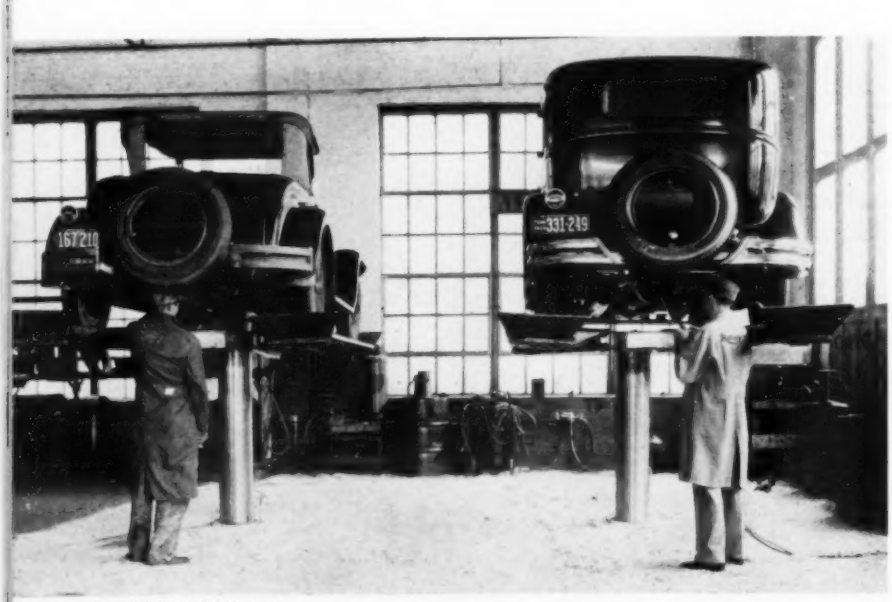
Pits and lifts are equally used. The arguments in favor of the lifts are:

1. *Advertising value of having lubrication in full view of the customer.*
2. *Convenience and cleanliness of work space and surroundings.*
3. *Saving in space by rotation of lift.*
4. *Greater flexibility in the layout (the lifts are easily removed and reinstalled).*

The arguments for the pits are:

1. *Safety in operation.*
2. *Low initial cost.*
3. *Lower building when the work space is enclosed. (The free height should be at least 14 feet when lifts are used.)*

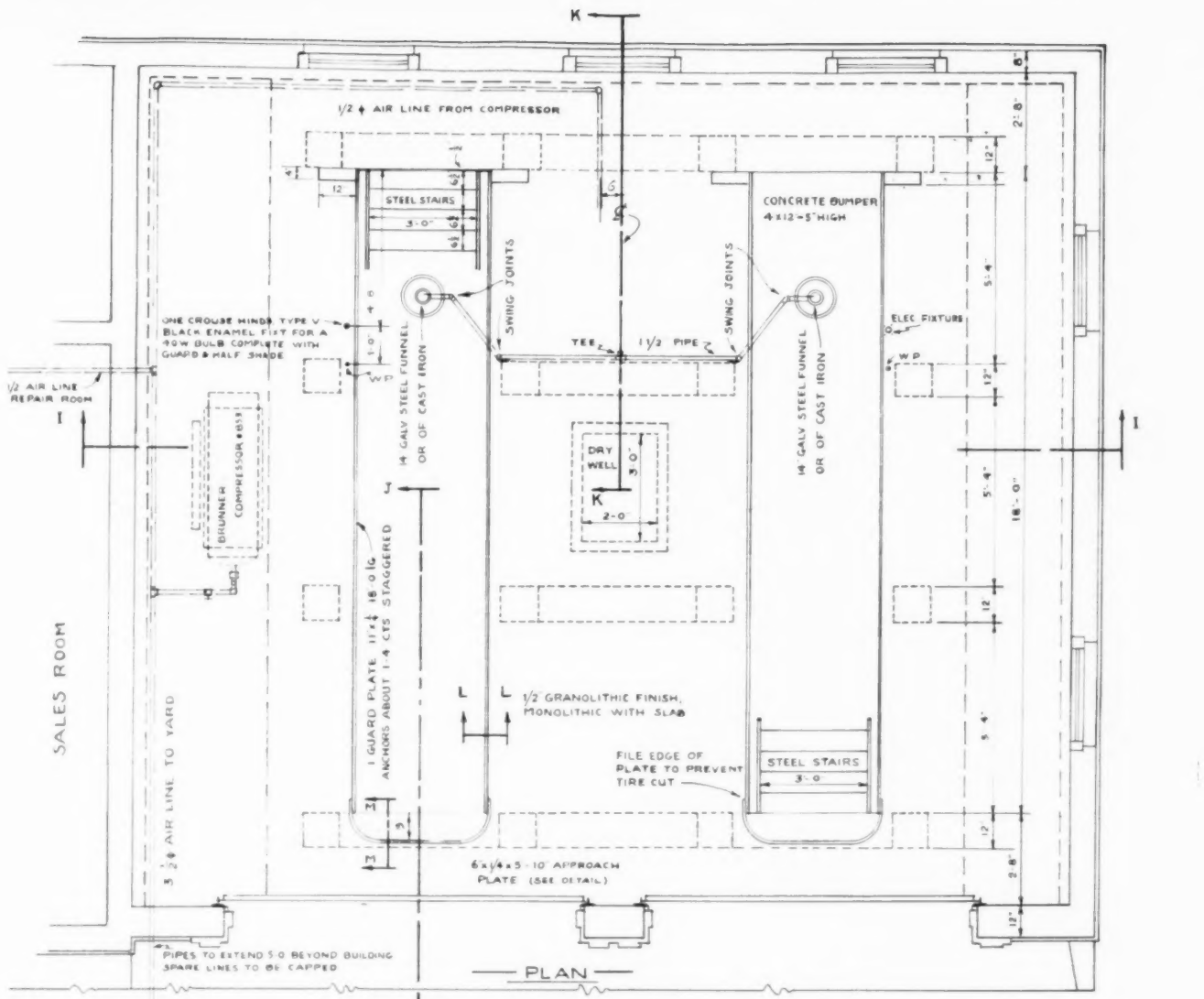
A number of hydraulic and rotating lifts are on the market. The pits are either concrete or steel. Drain pans connected to dry-wells or slop-tanks should be installed with the pits. More efficient work is insured when the pits and lifts and the repair space are sheltered. The construction of the shelter should be governed by the considerations stated under "Salesroom, Toilets, Storage." Ample daylight should be provided. The enclosures and the equipment should be easily cleaned. Vertical supports should be limited to a minimum. Doors should be of folding, sliding, or overhead type. Exposed corners should be round and protected with guards.



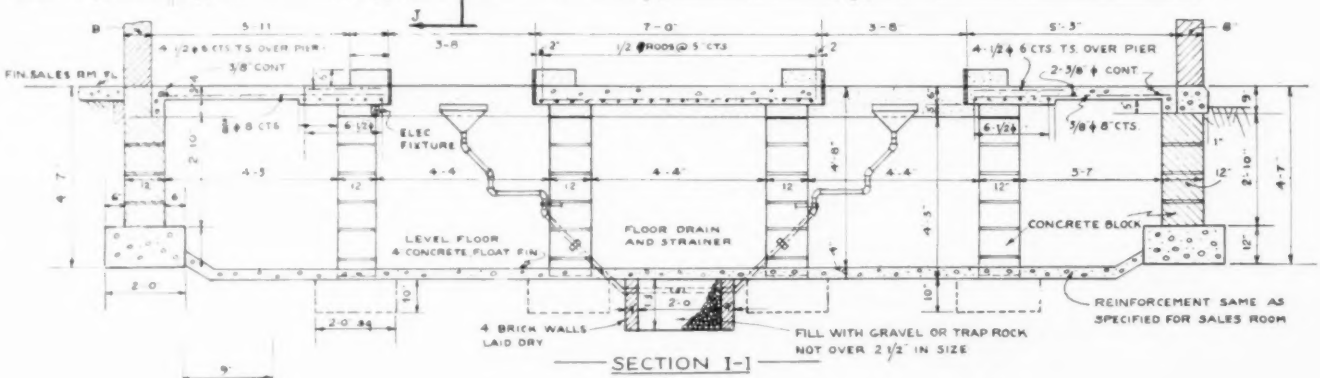
Courtesy Automobile Rotary Lift Company

Hydraulic Lifts

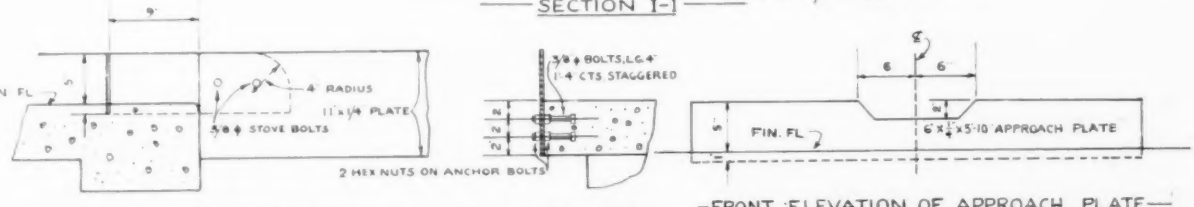
On Right-Hand Page: Construction Details of Greasing Pits



PLAN

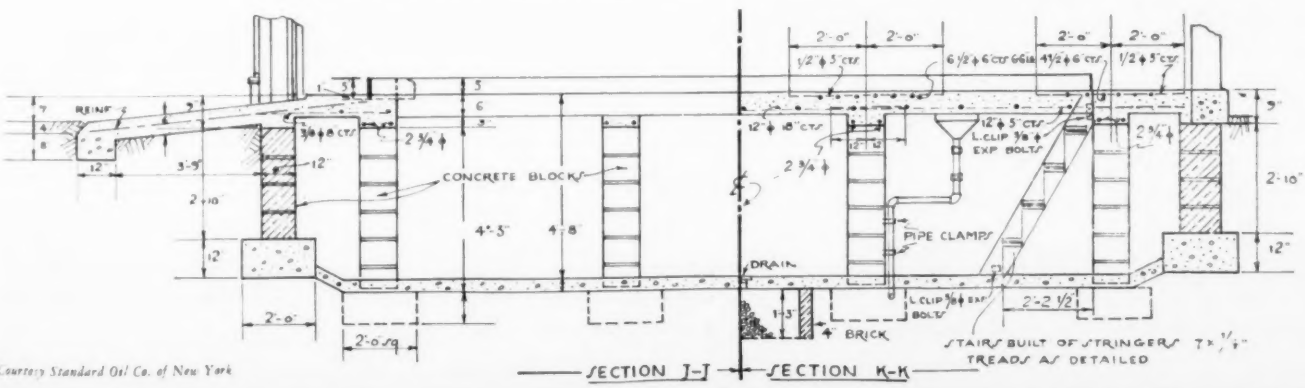


SECTION I-I



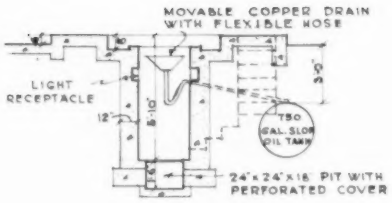
SECTION M-M — SECTION L-L

FRONT ELEVATION OF APPROACH PLATE
SCALE 1 1/2" = 1'-0"



SECTION J-J — SECTION K-K

Courtesy Standard Oil Co. of New York



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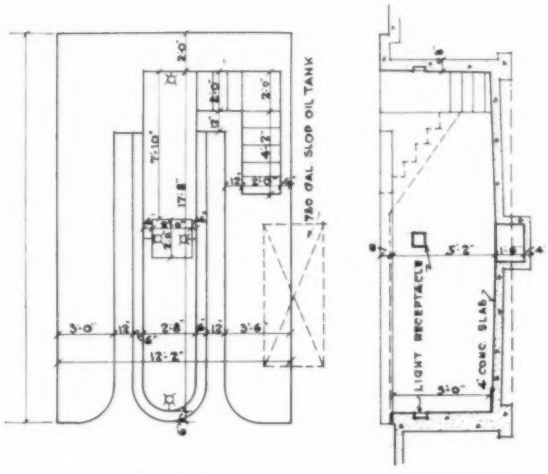


PLAN SECTION

Detail of Crankcase Pit

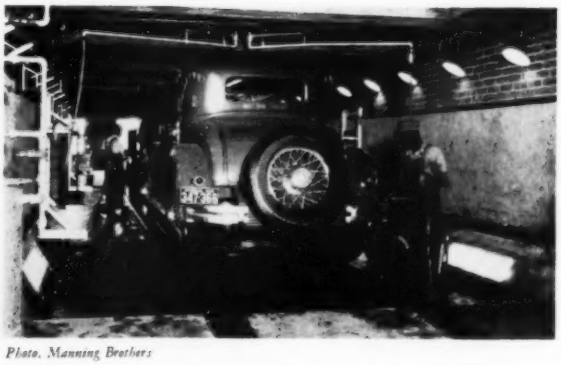


Photo. Manning Brothers

Auto Laundry in the Fisher Building, Detroit, Albert Kahn, Inc., Architect

Note the lighting fixtures at floor.

Heating

Electricity, gas, oil, and coal, are used according to local conditions. A central heating plant should be installed in the storage or in the salesroom or in special room. The salesroom and toilets should be heated to 70 degrees in zero weather, and the other enclosed spaces to 50 degrees.

Plumbing

The plumbing system should include:

1. *Drainage for surface water.*
2. *House sewers.*
3. *Water supply for yard water stations, toilets, lavatories, car washing and shop.*

Where there is no sewer connection, a septic tank should be installed, with drain running to filter bed. A water heater should be installed in connection with the heating plant. Fixtures should include: lavatories, closets and slopsink. Chemical closets should be used when city water supply is not available. Soap container, mirror, towels, toilet paper, and waste towel holder, should be furnished for the toilets.

Air System

Compressed air is used for: Air meters and hose lines for tires (the air supply stations should be located away from the pump islands so as not to obstruct the access to the pumps), air operated doors, air hammers, air guns, engine cleaners, grease guns, spring lubricators, tire tools, air lifts, air-operated gasoline pumps, and car washing. The size of compressor and air tank depends on the required service. Compressor and tank can be located in the storage or in the shop.

Lighting

The station should be lighted sufficiently to attract the large percentage of cars operated after dark, and to insure efficient and safe operation. The light should be concentrated on the vital parts of the station. Ramps and driveways should be lighted to an intensity several times that of the surrounding streets, as an invitation to the motorist to drive in. The attention of the approaching driver should be focussed on the pumps. Well diffused light of sufficient intensity should be thrown on all parts of the cars, pumps, lifts, pits, water and air supply stations. The following foot-candle intensities are recommended:

Pump island and work space....	15 f.c. (Min. 10)
Yard and driveways.....	4 f.c. (Min. 2)

1. *Methods of exterior lighting.*

A. OUTLINE WITH BARE LAMPS produces an unpleasant and dangerous glare. Small lamps are inefficient. One 1000-watt lamp generates over twice as much light as forty 25-watt lamps for only half the cost.

B. USE OF STREET LIGHTING units does not eliminate the glare. Part of the light is projected into the streets and on the surrounding buildings, and the desired contrast cannot be created.

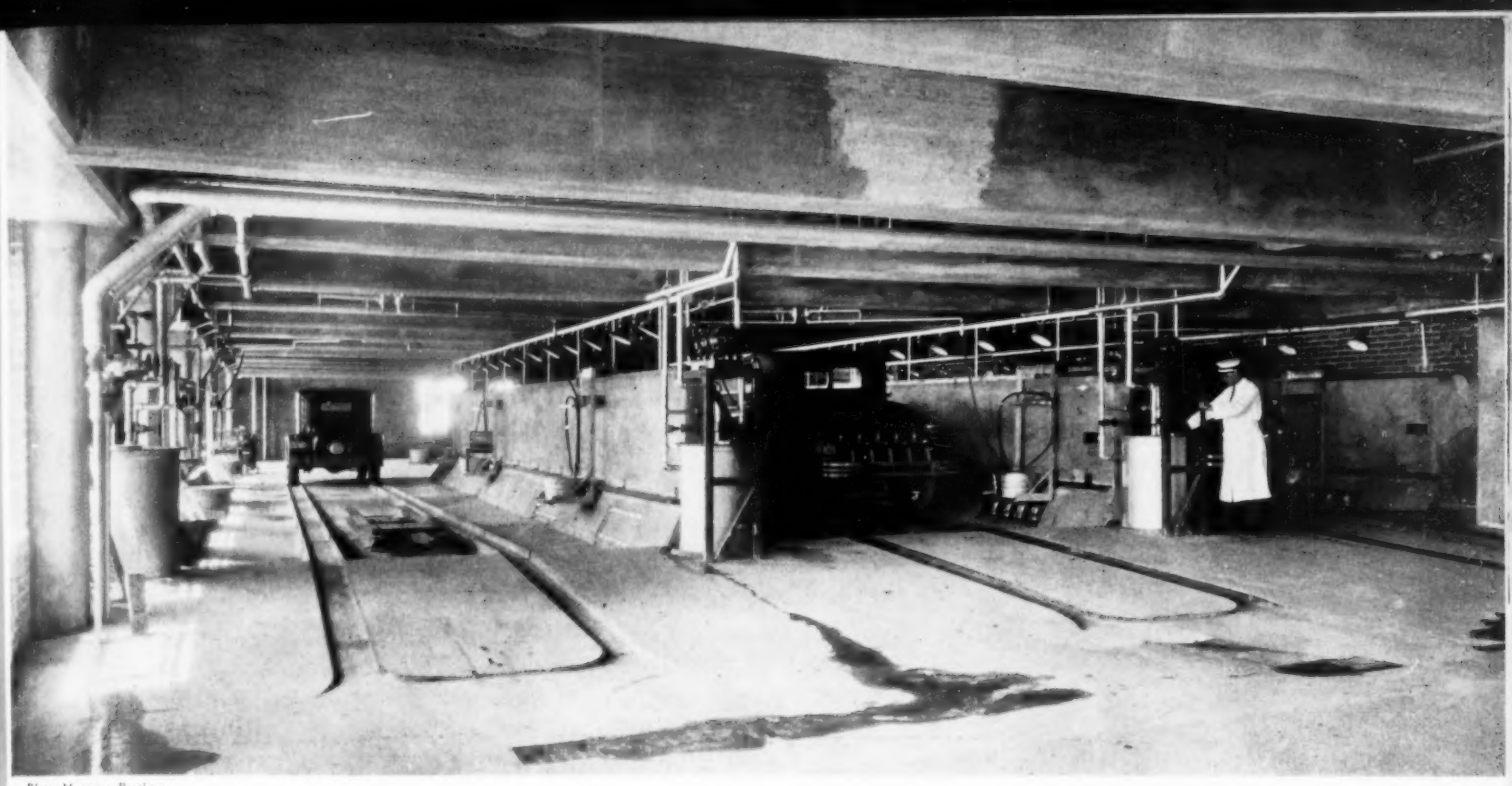


Photo. Manning Brothers

Auto Laundry in the Fisher Building, Detroit, Albert Kahn, Inc., Architect

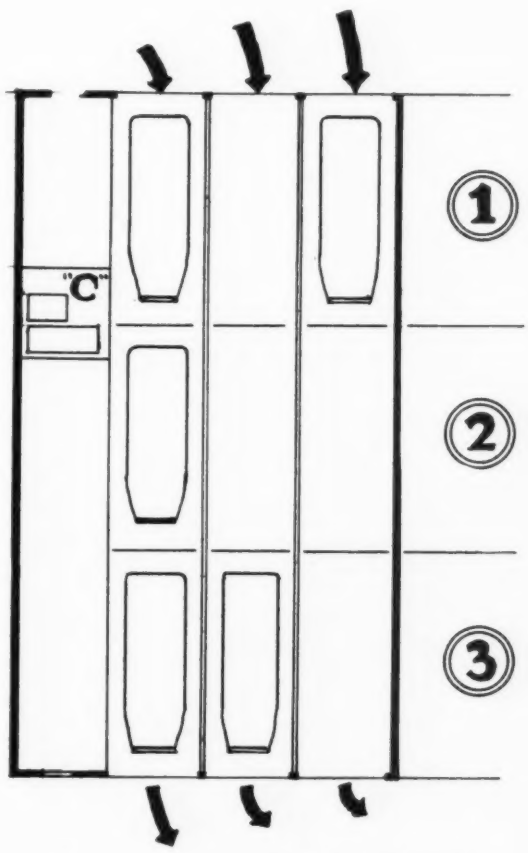
c. FLOODLIGHTING is at present the simplest and most efficient method used for illumination of the outdoor areas. The greater part of the light can be directed to the desired areas: ramps, driveways, pumps, pits, lifts. The glare can be practically avoided. The lighting is flexible and produces the desired contrast with the surroundings. Colored light can be used.

Two types of floodlights have been developed, for the lighting of filling stations. One is the closed type with mirrored glass reflectors mounted in dust-tight housing with diffusing lens. The other is an open type floodlight with a mat-finish reflecting surface and no cover. The floodlights should be mounted on poles from 15 to 30 feet high. At least two units should be used in order to eliminate shadows. If spotlights are located low or on the ground to light the buildings they should be placed in such a way that glare will be avoided, from the driveways.

The lighting of display case and showroom should follow the principles of good shop-lighting. The salesroom should be sufficiently lighted for easy operation. Pits, lifts, and repair shop, should have outlets for vapor-proof handlamps with tumbler switches in the handles, besides fixtures for general illumination. Entrances to toilets and shop should be clearly recognized. If canopy is used, ceiling reflectors should be installed for lighting the covered area.

SIGNS

Signs should be used to announce the station and the brand of gasoline sold, and to indicate the access ramps. The signs should catch the attention of a driver moving from 20 to 40 miles an hour with his eyes on the traffic, and should be easily discerned among the variety of forms and colors of the streets and highways. They should be equally legible at day and at night from 500 to 600 feet ahead to give the driver time to react. (A traffic signal should be legible at a distance of 200 feet.) The legibility of the sign depends on its location and the design.



Diagrammatic Layout for Auto Laundry

"C" = Air Compressor
1 = Chassis Cleaning Rack
2 = Body Washing Rack
3 = Finishing Rack

Closed Type Floodlighting Fixture, Westinghouse Lamp Company

Open Type Floodlighting Fixture, Crouse-Hinds Company

Closed Type Floodlighting Fixture, Crouse-Hinds Company

1. *Location.*

Signs placed too high or too low are easily overlooked. The low sightlines and the narrow angle of visibility of the modern car must be considered. The signs should be above the heads of the pedestrians and far enough from the ground to keep children from climbing them. The reading surface of the sign can be sloped towards the driver. Surroundings, and the location of competing signs, should be considered.

2. *Design.*

Visibility is a result of the proper combination of at least four variables—size, contrast, brightness, and length of exposure. Size, color, and shape, are the fundamental elements of a sign. Size is the most important, color the next important, and shape the least important. Signs can be so large as not to impress the driver. The sign must fit into the picture as a unit.

"In the control of traffic, vision and its more common defects must be considered. Shapes and color are the chief fundamentals of a signal. . . . The shape alone is of very doubtful value, because a signal should be recognizable at a reasonable distance. Quite an appreciable number of persons have vision so defective that they cannot accurately distinguish shapes at a distance. However, this difficulty is not found in the recognition of certain colors. It is contended that about four per cent of the people are color-blind, but this statement is as misleading as it is indefinite. . . . It is exceedingly difficult to find a person who cannot distinguish the two colors red and blue-green as being different. Persons experienced in color-vision believe that perhaps no more than one in a hundred thousand persons would have difficulty in distinguishing these two colors. However, it is likely that a thousand times more persons have eye-defects so serious as to make shapes unrecognizable at a reasonable distance. Furthermore, fog, rain, smoke, and dust, often obliterate shapes when under the same conditions a powerful luminous color-signal would still be seen as a spot of colored light. After utilizing color, the most powerful and practical aspect of light for traffic signals, it may be well to take advantage of form. With colored signals, this may be largely a matter of position. For example, we may have a horizontal line of red lights and a vertical line of blue-green lights. . . . Intensity, of course, is another factor upon which attention-value depends, but the mistake is often made of depending upon photometric measurements or candlepower for determining this phase of attention value. Here we encounter something akin to glare . . ." *

The principles for traffic lights quoted above should be applied to the design of signs for filling stations. The design should be based on the attention-value of elementary contrasting colors and shapes, and on the direction the shape takes. A vertical form is in itself a stop signal in a street with horizontally moving traffic. A horizontal or sloping form will deflect the attention to the access ramp. An easily recognized trade-mark is more

* Luckiesh: Light and Work

valuable than words. Lettering should therefore be limited to a minimum, and the design of the letters be based on the same principles. Moving light effects should be limited to slow motion to contrast with the fast traffic. The attention-value of different colors varies with the background. On a white background, the colors can be arranged according to their attention-value in the following sequence: red, black, green, orange, blue, purple, yellow.

The size of letters for clear visibility depends upon color, background, atmospheric conditions, spacing, and design. The Flexlume Corporation uses the following averages:

4-inch letter legible at a distance of 200 feet
8-inch letter legible at a distance of 400 feet
12-inch letter legible at a distance of 675 feet
24-inch letter legible at a distance of 1300 feet

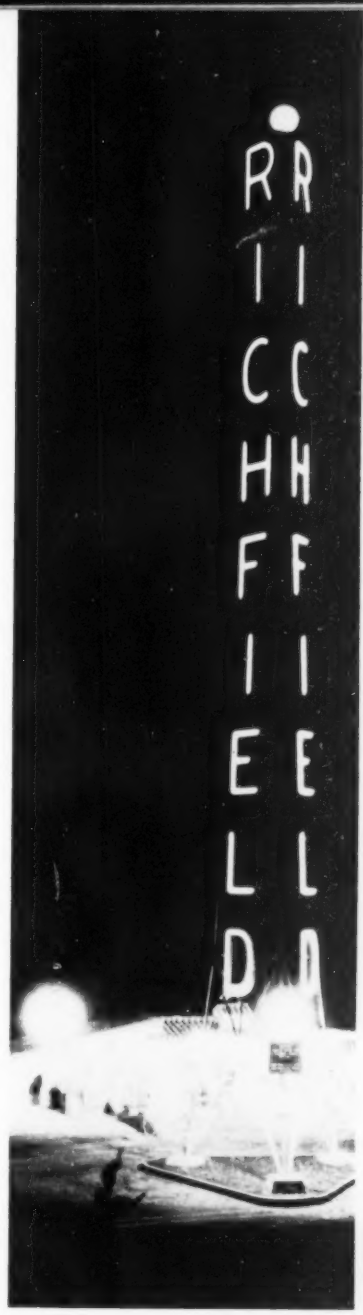
The signs should be designed for equal legibility at day and at night. The painted, flat, or plastic sign can be floodlighted. Neon-light tubes can be applied to the letters and used for outlining the sign. Combinations of glass and metal offer new possibilities. Photo-electric cell control will light the sign whenever daylight fails and regardless of the time of the day.

3. *Signs in the Yard.*

Access to the various units should be clearly indicated. Signs, strips painted on the driveways, mushroom lights, or neon light tubes indicating the traffic lines can be used, and will in many cases cause the waiting driver to decide on extra service. The different brands of gasoline should be clearly shown on the pumps. All signs located in the yard for the information of the driver should be placed low and in relation to their visibility from the car. If they are placed on the ground, they should be tilted, and located on the driver's side of the car.

DISPLAY

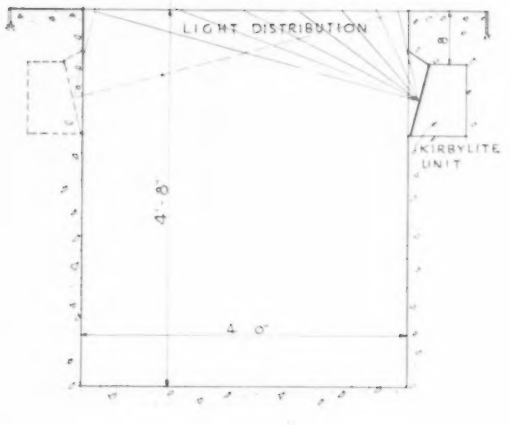
Display cases for accessories should be located at the part of the driveways where the cars stop, or along the approach. They can be placed on the islands or in the adjoining building. The arrangement of the display should be governed by the visibility from the car, and the height of the case should correspond to the height of the car window. The case should be lighted at night. Contrast with the background is important. The light should be concentrated on the display, and if the case is placed in the building it is advisable to keep the surface of the building dark.



Neon Light Sign for a station in California. (See page 584).

Courtesy Claude Neon Lights, Inc.

A Good Sign. But note the glare caused by lights of the station. (See text, page 574).



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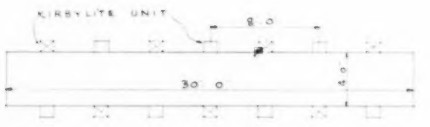
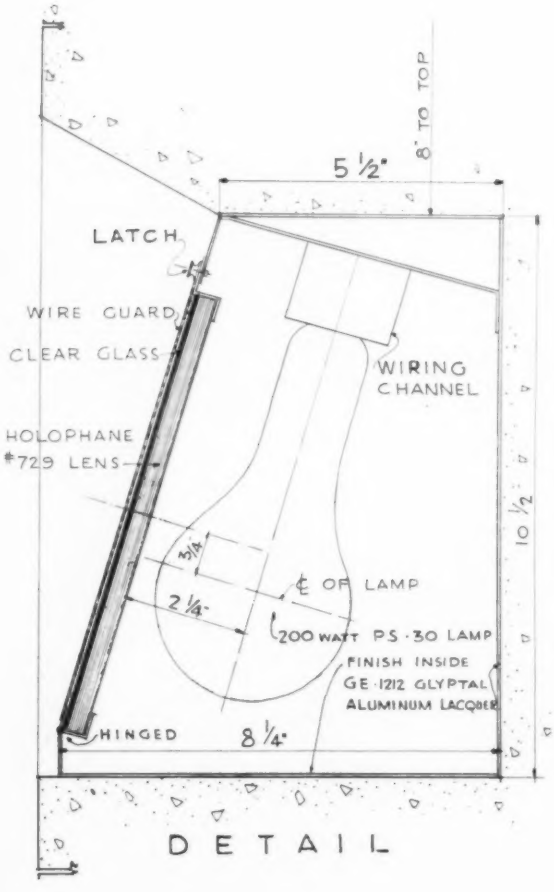


NOTE:
FOR MODERATE INTENSITY USE 7 UNITS
FOR HIGH INTENSITY USE 14 UNITS

PLAN



DETAIL

Oil Pit Illumination, L. Erikson Electric Company, South Boston, Mass.

MATERIAL

1. *All materials used for buildings, equipment and fixtures should be manufactured and transported with minimum cost.*

2. *They should be easily erected, replaced, and repaired.*

3. *They should be of such durability as to withstand hard use and the bumping of cars and movable equipment.*

4. *Exposed surfaces should be non-absorbent to oil and grease, and resistant to the chemical action of gasoline. Cement floors should be treated with a filler to prevent staining.*

5. *They should be resistant to fire and water. All metals should be non-corrosive.*

6. *All surfaces should be easily cleaned.*

7. *The number and quantity of materials used should be reduced to a minimum for the sake of economy and visual unity.*

FORM

The plastic forms of buildings, equipment and fixtures should be determined by the following criteria:

1. *Maximum appeal to the driver.*

The attention value of form, form-relation and form-direction has been discussed above. Elementary forms are easily read. Ornaments and decorations should be avoided.

2. *Maximum ease and certainty of operation.*

Sharp, projecting forms should be avoided. Vertical supports should be limited to a minimum and all corners should be rounded.

3. *Minimum cost of construction and maintenance.*

All forms should be easily made and easily cleaned. All surfaces should be smooth for effective cleansing action of flush-water.

4. *Maximum plastic unity.*

The characteristic plastic value of the station depends upon the clear spatial organization of a number of decidedly differentiated units. The visual unity should be insured by the repeated use of elementary forms.

5. *Organic relation to surroundings.*

The standardized station should fit into varying surroundings. All "architectural styling" should therefore be avoided.

COLOR

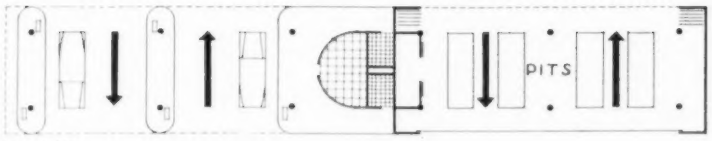
Integral color, pigment-color and colored light—including the white, gray, black values—should be used:

1. *To increase the appeal to the driver.*

The attention-value of color and color contrast has been discussed above. Elementary colors in concentrated areas have a high attention-value. The driver should easily recognize the station. A definite color scheme should therefore be adopted. The color scheme should be extended to the lighting.

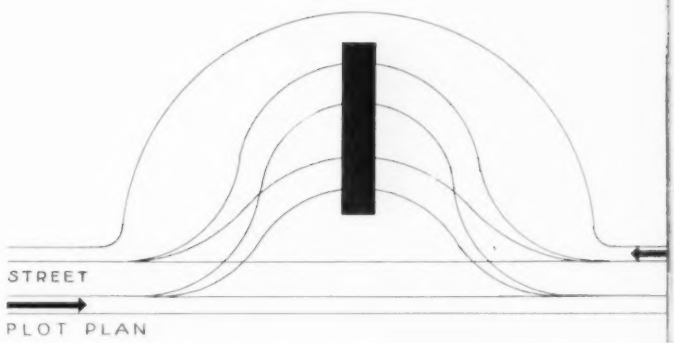
2. *To increase the ease, certainty, and safety of operation.*

Elementary colors are easily recognized. The colors should be organized to emphasize the various functions of the station. Pumps, lifts, air and water supply stations, shop, and access to toilet, should be clearly indicated, according to their importance. The pumps are the vital units of the station; their color should therefore have the highest attention-value. Auxiliary units such as toilets and storage should be less pronounced.



PLAN

ELEVATION



PLOT PLAN

Working spaces and indoor mechanical equipment should have light-reflecting surfaces. Piping and conduits should have clear color indications. Ramps, curbs, and islands should be clearly marked with striping or contrasting colors

3. *To facilitate the clean appearance of the station.*

The lower part of doors and walls in the shop should be dark so as not to show the unavoidable grease and oil stains. Toilets and salesroom should have colors that will make the presence of dirt easily detected.

4. *To increase the visual unity.*

The number of colors should be limited to a minimum. The colors should be organized to tie the various units together in a clear spatial relationship.

LANDSCAPING

Landscaping for rural or suburban stations should not interfere with the operation or the clear visibility. The natural colors should be organized with the color-scheme for the station. Plant materials should be such as are not affected by gasoline fumes.

COST AND RELATIVE VALUES.

Cost varies with location, size and construction. The construction cost of a typical small filling station can be divided approximately among the following items:

1. *Yard.* (This includes ramp, driveways, pits, landscaping, improvements, sewers. Pumps and tanks are charged to operation cost) 40%
2. *Buildings* 40%
3. *Equipment* 15%
4. *Lighting and Signs* 5%

The commercial value of the station can be divided between:

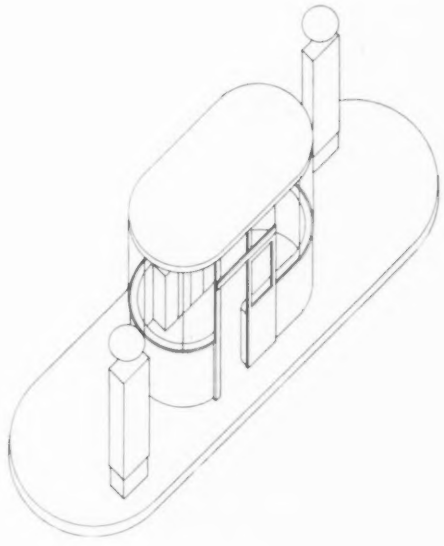
1. *Pump accessibility.*
2. *Attendance.*
3. *Appearance.*
4. *Signs and lighting.*

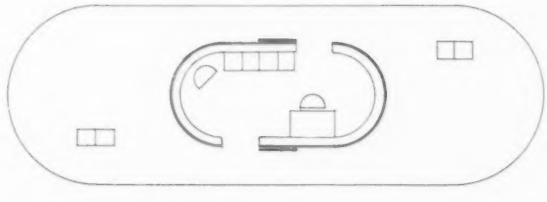
A number of interrelated factors make an exact general division difficult. The essential purpose of the station is the sale of gasoline.

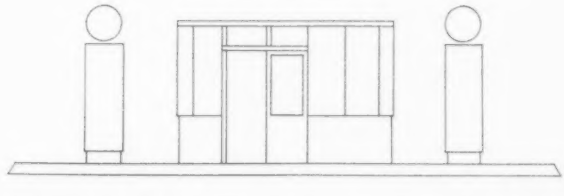
Pump accessibility counts most and can be rated to 50% of the total value. Attendance can be rated at 25%. Appearance of signs and lighting to 25%. Good attendance may offset a poor layout and may increase the sale of gasoline 50%. Rational use of light, color, and form, together with more economical construction, may increase the commercial value of the station without additional cost.

Filling and Service Station along a motor highway.

Materials: Aluminum alloy and glass. The pits are enclosed with sliding doors. Salesroom, toilets, and storage, are placed between the filling and service units. K. Lönberg-Holm, Architect.







Salesroom placed on the pump island. (See text, page 570).

Factory-made units of aluminum and glass, easily assembled in the field. K. Lönberg-Holm, Architect.

CHECKING LIST

1. *Design*
- Maximum appeal to the driver
- Maximum ease, certainty, and safety of operation
- Minimum cost of construction, maintenance, and operation
- Maximum plastic unity of the basic units
- Maximum organic relation to the community

2. *Location*
- Traffic and community survey
- Relation to traffic
- Visibility
- Relation to shopping centers, business centers and recreation centers
- Accessibility
- Future expansion

3. *Layout.*
- Separate handling of each operation

4. *Ramps, Driveways and Yard*
- Traffic diagram
- No sharp turns
- Width of ramps
- Parking space

5. *Tanks*
- The unloading tank truck must not block the operation
- Minimum piping
- Future expansion
- Local codes

6. *Pumps*
- Accessibility
- Number of outlets
- Height of islands
- Canopy. Slender supports. Height

7. *Salesroom*
- Proximity to pumps
- Location of doors
- Unobstructed view
- Loose equipment

8. *Toilets, Restroom.*
- Accessibility
- Remove from driveways
- Separation of entrances to men's and women's toilets
- Abundant natural light
- Ventilation

9. *Storage*
- Loose equipment, heating plant, compressor and lockers

10. *Construction*
- Specific functions
- Initial cost
- Time of erection
- Cost of maintenance and cleaning
- Fire resistance, permanency, flexibility
- Climatic conditions
- Local codes
- Inaccessible spaces to be avoided

11. *Pits, Lifts, Repair shop*
- Separation from pump islands.
- Drain pans
- Ample daylight when sheltered
- Vertical supports limited to a minimum.
- Doors: folding, sliding or overhead

12. *Heating*
- Individual requirements of each unit

13. *Plumbing*
- Drainage for surface water
- House sewers
- Water supply for yard water stations, toilets, lavatories, car washing and shop
- Slopsink
- Soap container
- Mirror
- Towels
- Toilet paper
- Waste towel holder

14. *Air system*
- Air meters and hose lines
- Air operated doors
- Air hammers
- Air guns
- Engine cleaners
- Grease guns
- Spring lubricators
- Tire tools
- Air lifts
- Air operated gasoline pumps
- Car washing
- Air stations to be separated from the pump islands

15. *Lighting*
- Attention-value
- Efficient operation
- Concentration on the vital units
- Flexibility
- Avoid glare
- Colored light
- Elimination of shadows on working spaces
- Vapor-proof handlamps for pits, lifts, and repair shop
- Ceiling reflectors for canopies

16. *Signs*
- Size
- Low sightlines of modern cars
- Should announce the brand of gasoline sold
- Attention-value of color, form
- Minimum lettering
- Background, surroundings
- Equal legibility at day and at night
- Clear indication of the various units
- Visibility from the driver's seat

17. *Display*
- Location
- Visibility from the car
- Lighting
- Contrast with background

18. *Materials*
- Cost
- Repair and replacement
- Durability
- Non-absorbent to oil and grease
- Resistant to chemical action of gasoline
- Resistant to fire and water
- Metal non-corrosive
- Easy cleaning
- Limited number of materials

19. *Form*
- Elementary forms
- No ornaments or decorations
- Sharp projecting forms to be avoided
- Corners rounded
- Minimum vertical supports
- Easy cleaning
- Smooth surfaces

20. *Color*
- Elementary colors
- Easily recognized color scheme
- Lighting
- Clear indication of the various functions
- Light reflecting colors for workspaces
- Clean appearance
- Visual unity
- Limited number of colors

21. *Landscaping*
- Visibility
- Colors
- Resistance to gasoline fumes

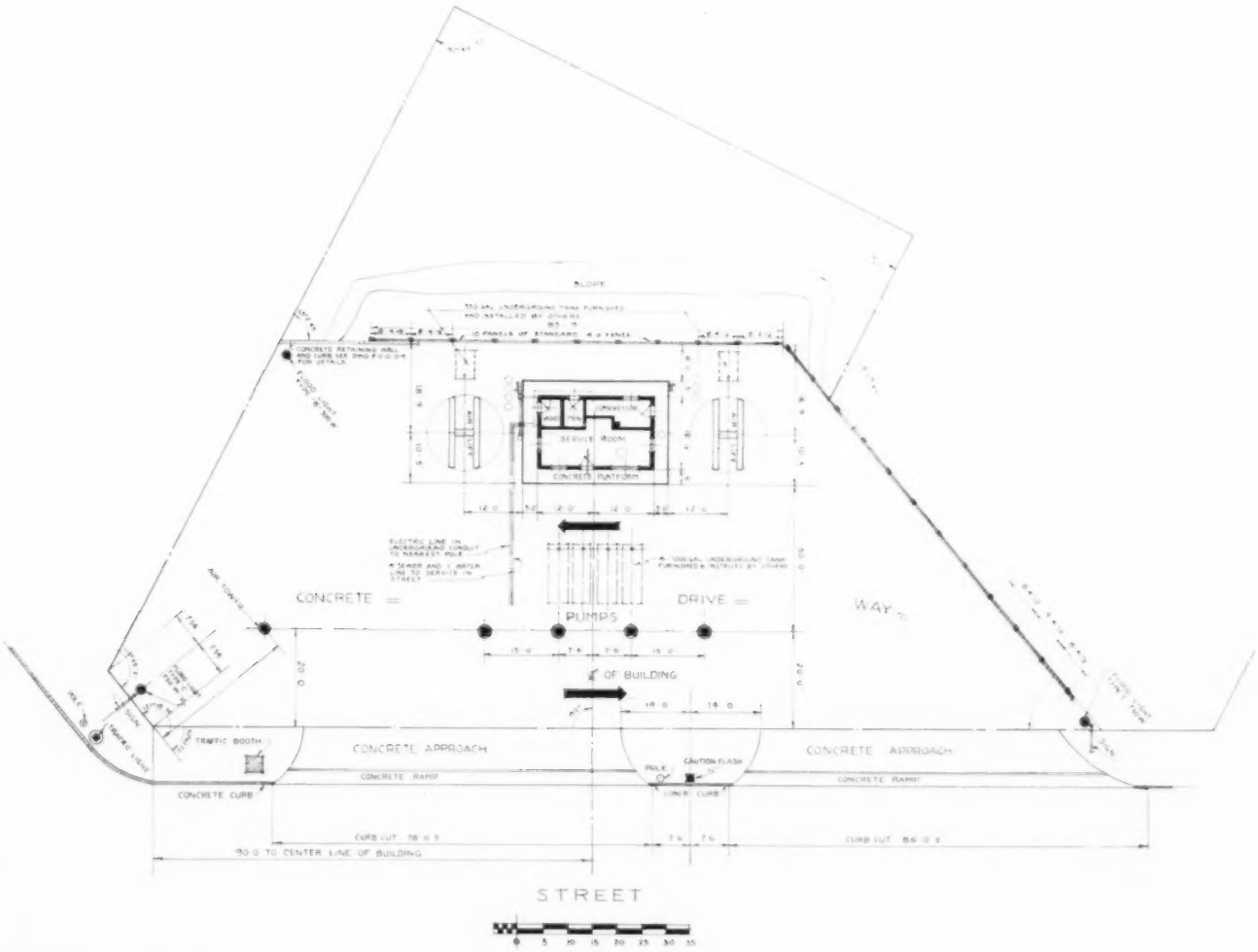
White Star "Master Service Station," Detroit. Good utilization of a narrow corner lot. Easy access to pumps and shop. Clear separation of filling and service areas. Materials: White and black glazed tiles. Note the use of black for the lower part of the doors that soon become dirty.

The station is easily cleaned, and looks clean. The canopy columns are unnecessarily heavy. The attention value of the false roof (blue metal shingles) could have been obtained in a more simple and economical way by the use of colored tiles for the upper part of the wall, thus eliminating roof, shingles, and gutters, reducing the number of contractors, and at the same time increasing the visual unity.

The visible light globes cause dangerous glare. The clearly differentiated units are tied together by the color scheme and by the repeated use of rectangular forms.

Service Station in Desplaines, Illinois. R. Harold Zook, Architect. Zook and McCaughey, Associated, Architects.

A picturesque station that fails to conform with the utilitarian pump and with the firewall at right.



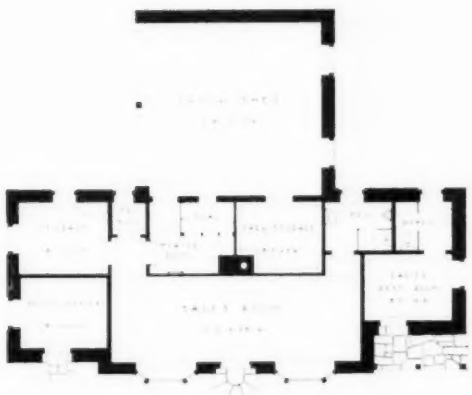
Tide Water Oil Company filling and service station in Camden, N. J.

Clear layout of interior plot. The station is visible from two streets. Easy access to pumps and lifts. Ample parking space. Clear arrangements of pumps and driveways. The steep roof, the heavy wood door, and the fenestration (which impairs the visibility from the operator's room) are unnecessary sacrifices to a false "architectural styling."

Filling Station built by Westchester County Park Commission for Hutchinson River Parkway, Penrose Stout, Consulting Architect, Gilmore D. Clarke, Landscape Architect.

Total cost	$12,500 (building only)
Building	10,000
Mechanical equipment	2,400
Signs and exterior lighting	100

Two of the supply pumps are housed in the building. The two others are hidden in a lattice-work structure placed on top of a stone curb, the whole having the outward semblance of a well of water on some well kept New England farm. The compressed air-standards are without reason boxed in to resemble old-fashioned hand-pumps with the familiar long wooden handle. The building and pumps are located well off the parkway drive with paved entrance and exit drives and a service area. The landscape treatment includes shrubbery that in time will screen the station completely.



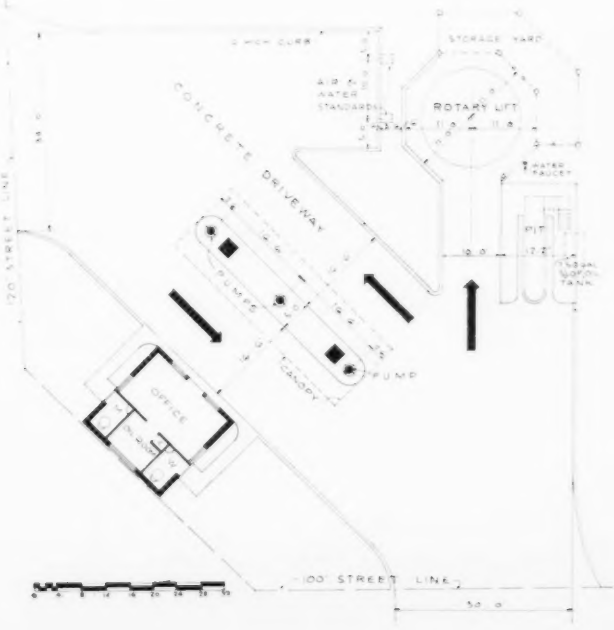
FLOOR PLAN

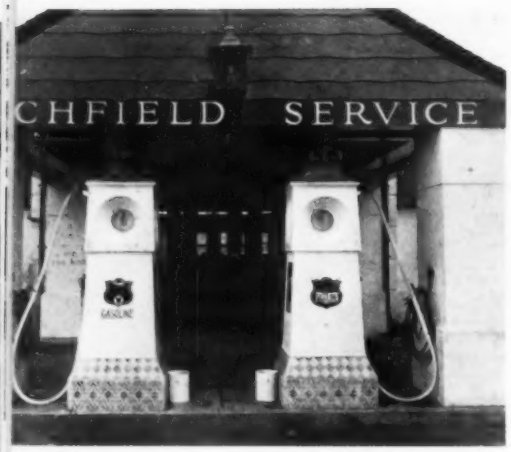
Filling and service station built for Radburn, N. J. (the new town for the motor age) by the City Housing Corporation, Clarence S. Stein, Architect.

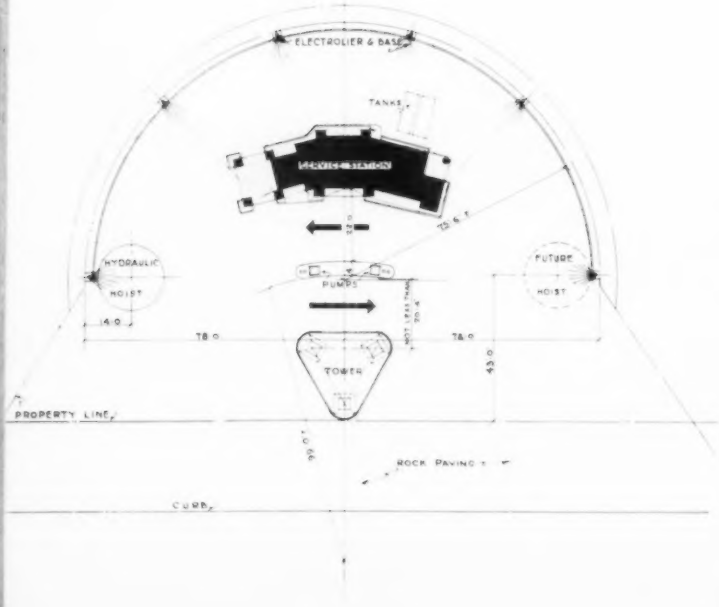
Total cost	$35,000
Site	17,000
Driveways, etc	6,000
Buildings and signs	12,000

Note: The above represents owner's investment. The tenant has also installed supplementary lighting and mechanical equipment.

There is no apparent justification for the steep roof. The unnecessarily heavy canopy columns impair visibility and pump operation. The operator is not able to see approaching cars from the salesroom. The forced symmetry of the design makes no distinction between the windows for the salesroom and the toilet entrances.







Service Stations along the major highways of California, Oregon and Washington by the Richfield Oil Company are links in a chain designed to reach from the Mexican border to Canada. The 125-foot Neon-light airplane beacon towers are a part of each station and intended to guide air liners and motorists. The stations were planned as nuclei for future community developments.

The semi-circular layout provides an easy flow of the traffic, but there is a complete lack of form relationship between the utilitarian construction of the slender steel towers and the unnecessarily heavy, picturesque architectural "effect" of the buildings. The stations are clear examples of "the often conflicting interests of commerce and community." The buildings have been "styled" architecturally for the sake of a superficial uniformity in the future community development. But the commercial spirit of the tower advertising shows a complete disregard for community rights.

METAL WALLS COMING

ADDING

"Nearly a square foot of rentable floor area per running foot of exterior wall"

"Net income of $2 to $7 per running foot of wall"

CUTTING DOWN

Erection time

Heat loss

Extra weight

Wasted space

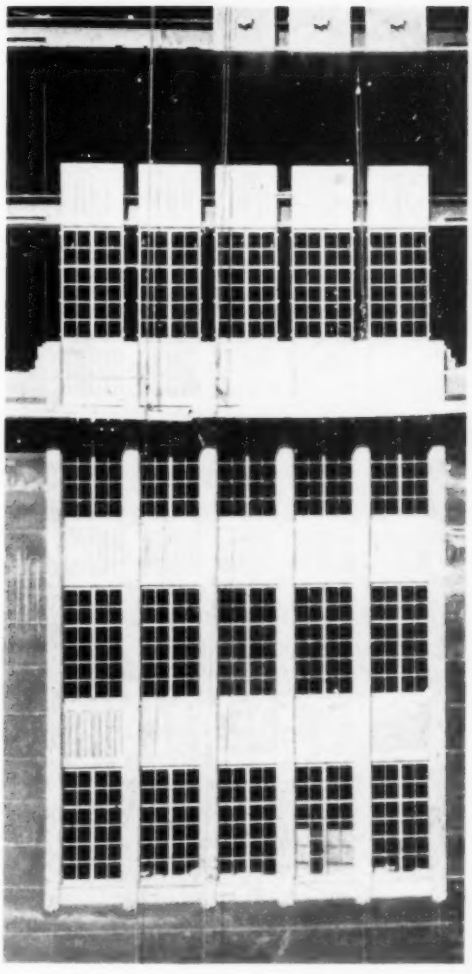
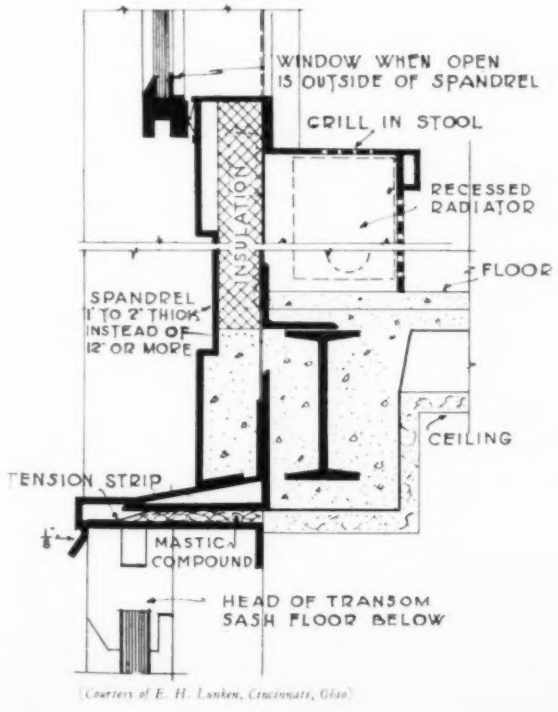


Photo shows metal spandrels with 12-inch brick backing in process of erection, Hollander Building, New York City; Shreve, Lamb and Harmon, Architects

In the Hollander Building, New York City, the architects have gone a long step forward in the logical use of metal spandrels.

"From the progress photo shown," says Mr. Lamb, "one can see what a simple matter it would be to eliminate masonry walls entirely as soon as the building code is changed to permit such construction. The introduction of rustless metals which do not require painting is opening up a new field for improvement in building construction.

"A metal wall such as that shown in the progress photo if backed by proper fireproof insulation would save in erection time, save heat loss, and, of greater importance from the standpoint of the client, would add nearly a square foot of rentable floor area per running foot of exterior wall. This would mean an added *net* income, depending on location, of $2 to $7 per running foot of wall per floor per year, in addition to a lower first cost for the building."



(Courtesy of E. H. Lunken, Cincinnati, Ohio)

The Next Step: A metal spandrel with insulation backing but with no masonry.

THE ARCHITECT'S LIBRARY

MODERN ARCHITECTURE

HENRY-RUSSELL HITCHCOCK, JR.

Modern Architecture: Romanticism and Reintegration. Payson and Clarke, Ltd., New York, 1929. $10.00.

The time has long been ripe for just such a book for general reading as this by Mr. Hitchcock, whose long journeys and European friendships are happily connected with architecture and especially with the very latest movement in modern architecture abroad. Comparing his book with Fiske Kimball's *American Architecture* the American reader may get two entirely different aspects from two eminent American critics of some of the most interesting current problems. The increasing interest in the development of modern architecture will be very much helped by this book, which is written by an American with more than an American outlook on the question.

Mr. Hitchcock shows with a rare clarity the two expressions architecture takes today with their respective origins going back to the period of 1750–1800 when architecture decidedly separated from the past. The author's deep understanding of European psychology explains the high quality of his work. Seldom has the movement of the "New Pioneers," as he calls the group including names like Le Corbusier and Gropius, been shown with such clear relation to the past; rarely is the intellectual background of European architecture better explained.

Mr. Hitchcock shows, in his three chapters with their excellently chosen pictures, the age of Romanticism, the movement of the "New Tradition," and the "New Pioneers." He points out the important difference between the representatives of the "New Tradition" who believe in rearranging and redeveloping the classical forms, still using engineering and materials in an eclectic way as a subsidiary means to the end; while the "New Pioneers" take the "lesson of the engineer" and new materials as a basis on which they develop new architectural conceptions and forms. Mr. Hitchcock follows the development from the last European style, the Baroque, through a romantic, slavish copying of Gothic and Greek in the early part of the 19th century, to the "New Tradition," a movement which appeared as soon as architects turned from the "eclecticism of taste" to the "eclecticism of style" with the intention of founding a rational and integrated manner. He analyzes very cleverly this interesting period when the Classical Revival, because of the activity of the rationalists and the coming to terms with the Mediaevalists, was finally dissolved in the eclecticism of taste all over Europe and America. The Classical Revival, the Mediaeval Revival, the big new factor of engineering, an heroic conflict of new forces, the birth hour of something entirely new.

In the second half the book finally shows the deep result in the movement of the modern pioneers. These men, Le Corbusier and Lurcat in France, Gropius, Mies van der Rohe in Germany, Oud in Holland, Vesnin and Bouroff in Russia, represent entirely new possibilities at a moment when the "New Tradition" is coming to a dead point. Mr. Hitchcock sees clearly the important influence of this young movement on the future architecture of America. He certainly uses a language very new to most of the architectural historians. It is finally of greatest interest to see an architectural discussion removed from the sterile level of analyzing in terms of styles.

The author finishes his excellent book with valuable bibliographical notes up to the latest moment. His study in its completeness and thoroughly sharp analysis of the subject is the best English book on the increasingly important problem.

O. G. STONOROV.

COLLEGE ARCHITECTURE IN AMERICA AND ITS PAST IN THE DEVELOPMENT OF THE CAMPUS

CHARLES B. KLAUDER AND HERBERT C. WISE

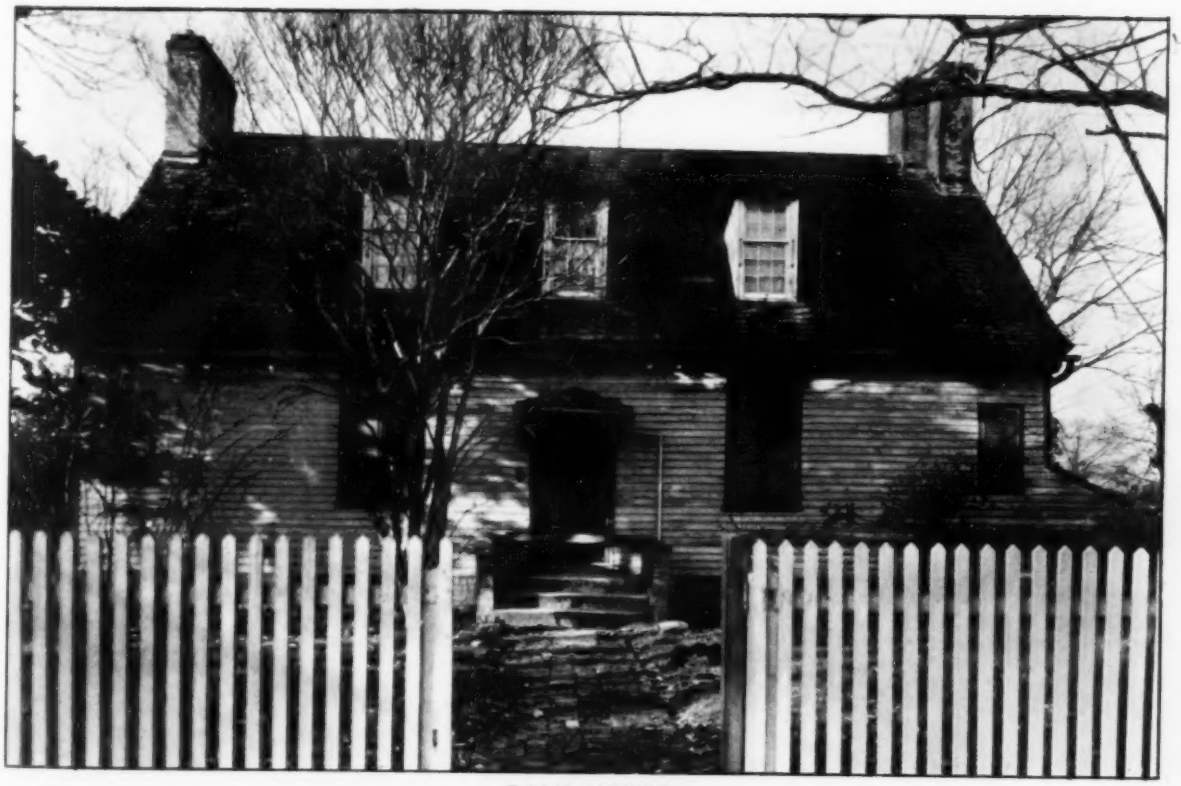
Chas. Scribner's Sons, publishers, $5.00 (revised by Aucotton).

MESSRS. KLAUDER AND WISE discuss at length and generously illustrate the different kinds of collegiate institutions and their requirements; the different kinds of buildings—dormitories, classroom and lecture buildings, libraries, museums, chapels and auditoriums, dining halls, administration buildings, buildings for engineering and the natural sciences, for athletics, and for student and faculty welfare. The list only partly suggests how highly organized and how complex is the modern American University; and what a problem an architect has who has a new university to plan and who wishes to give architectural unity to its diverse demands. On a level site, a symmetrical scheme is generally conceded to be most appropriate, whereas a rugged irregular site generally requires irregular groupings. Annapolis and West Point are instances of these. In western colleges, there is now an imperious demand for parking space for automobiles, which suggests how rapidly "college requirements" are changing. The modern college dormitory has almost as many shower baths as students, and most professors seem to have stenographers. No doubt the students are cleaner and the professors more business like. At any rate, college architecture is improving and collegiate buildings seem destined to become as characteristic of the future America as monastic buildings were of mediaeval Europe.

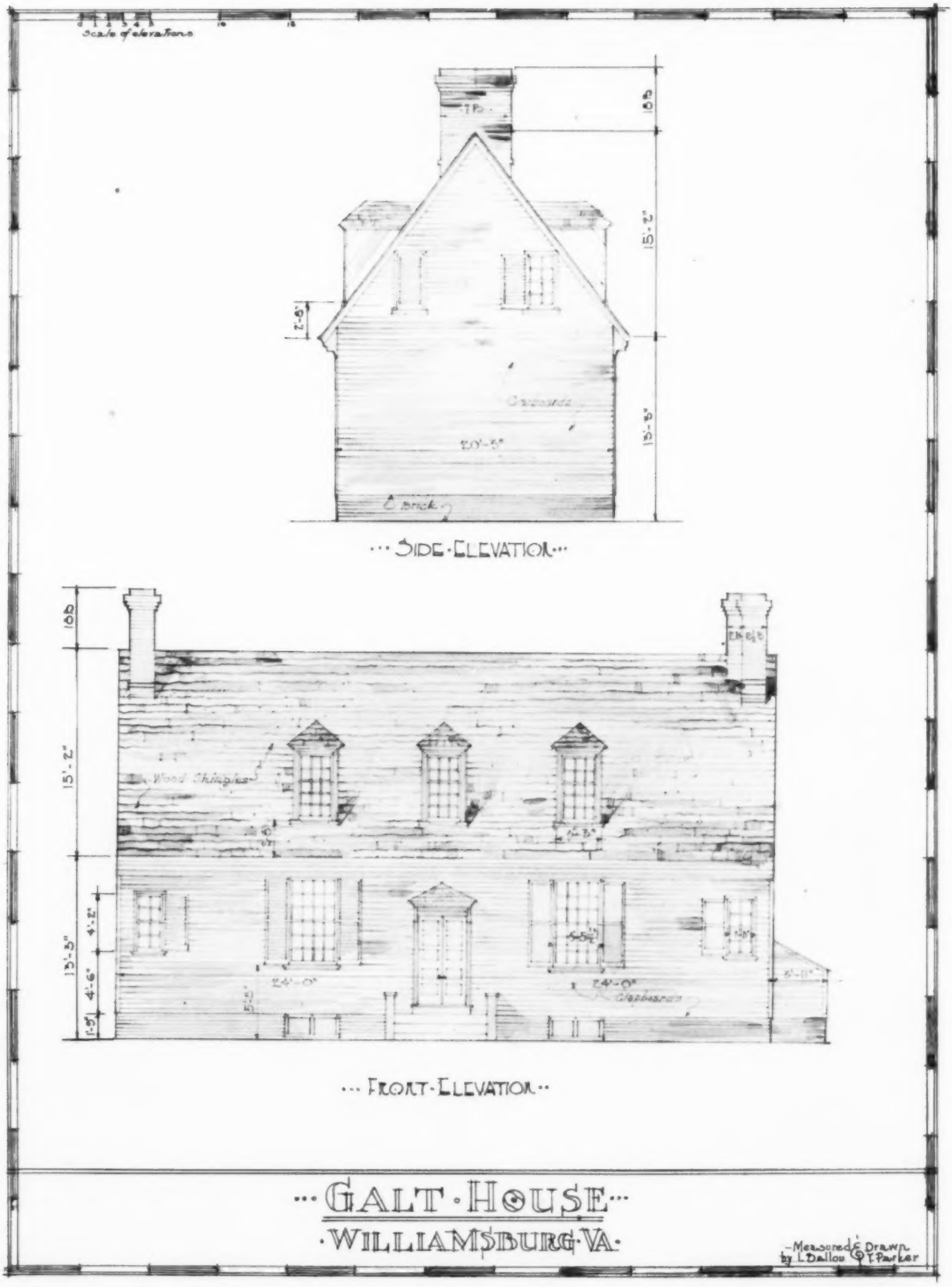
A. W. COLTON.

MEASURED DRAWINGS OF EARLY AMERICAN ARCHITECTURE

MARTHA WASHINGTON'S KITCHEN
WILLIAMSBURG, VIRGINIA



GALT HOUSE
WILLIAMSBURG, VIRGINIA



··· SIDE · ELEVATION ···

··· FRONT · ELEVATION ···

··· GALT · HOUSE ···

· WILLIAMSBURG · VA ·

Measured & Drawn by L. Dallou & T. Parker

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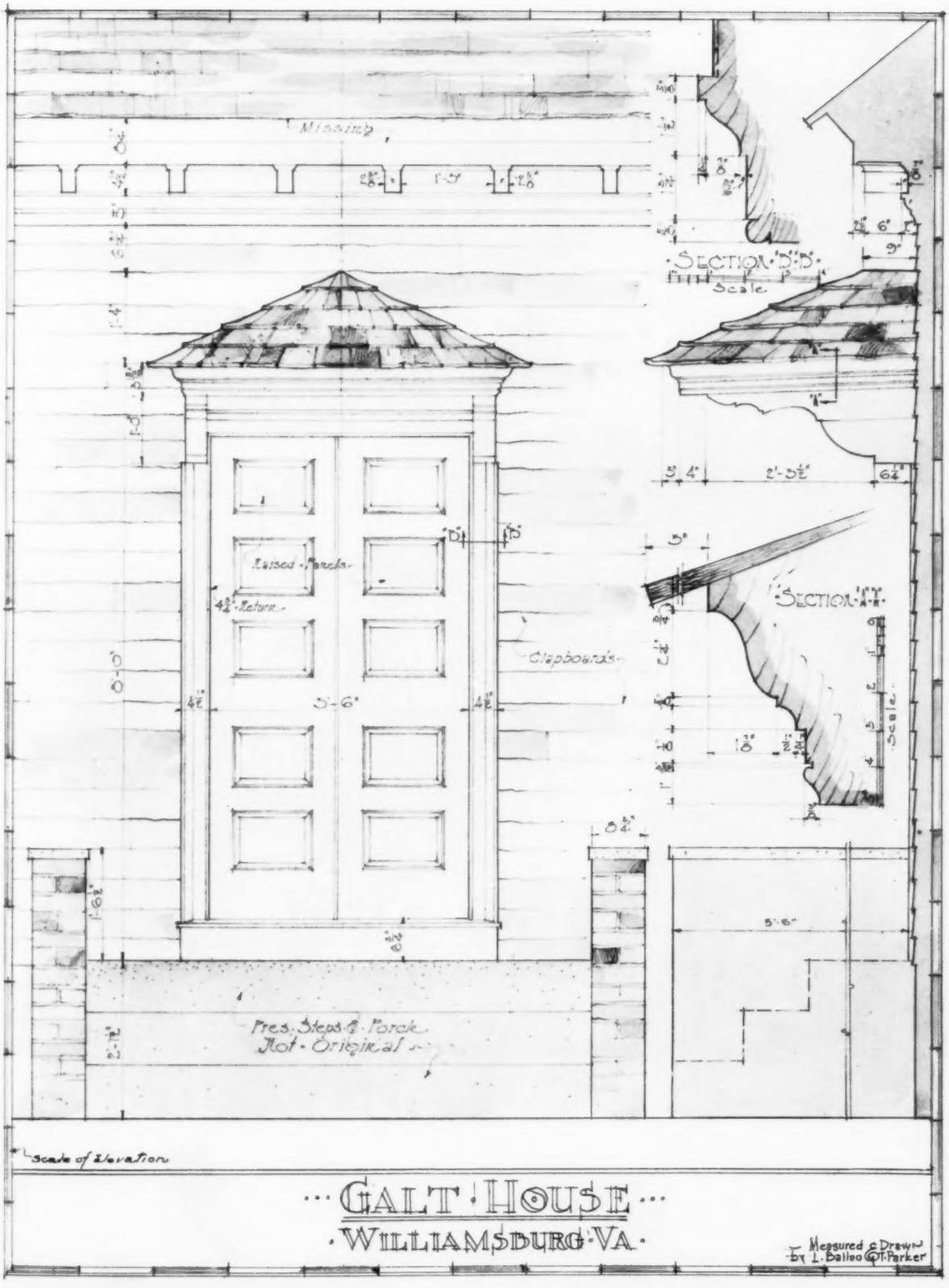
EARLY AMERICAN ARCHITECTURE



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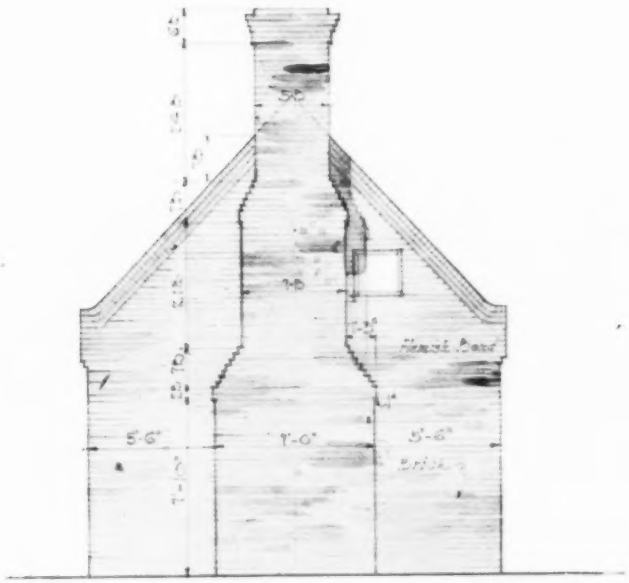
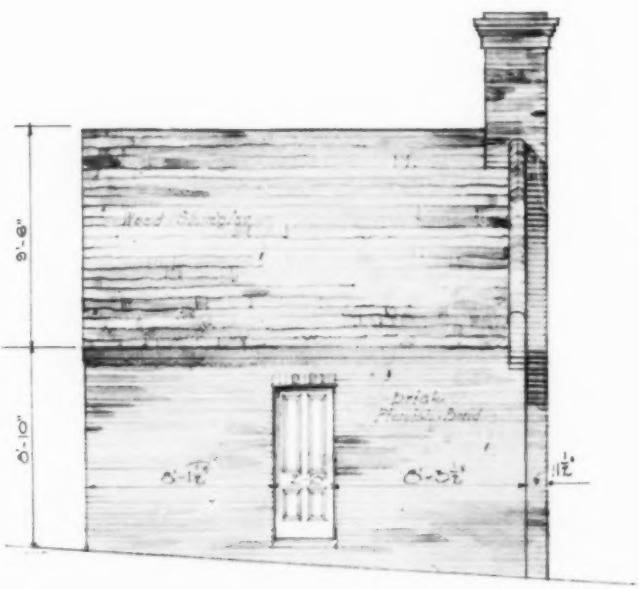
Scale of Elevations



·· END·ELEVATION ··



·· FRONT·ELEVATION ··

·· MARTHA·WASHINGTON'S·KITCHEN ··

x WILLIAMSBURG·VA x

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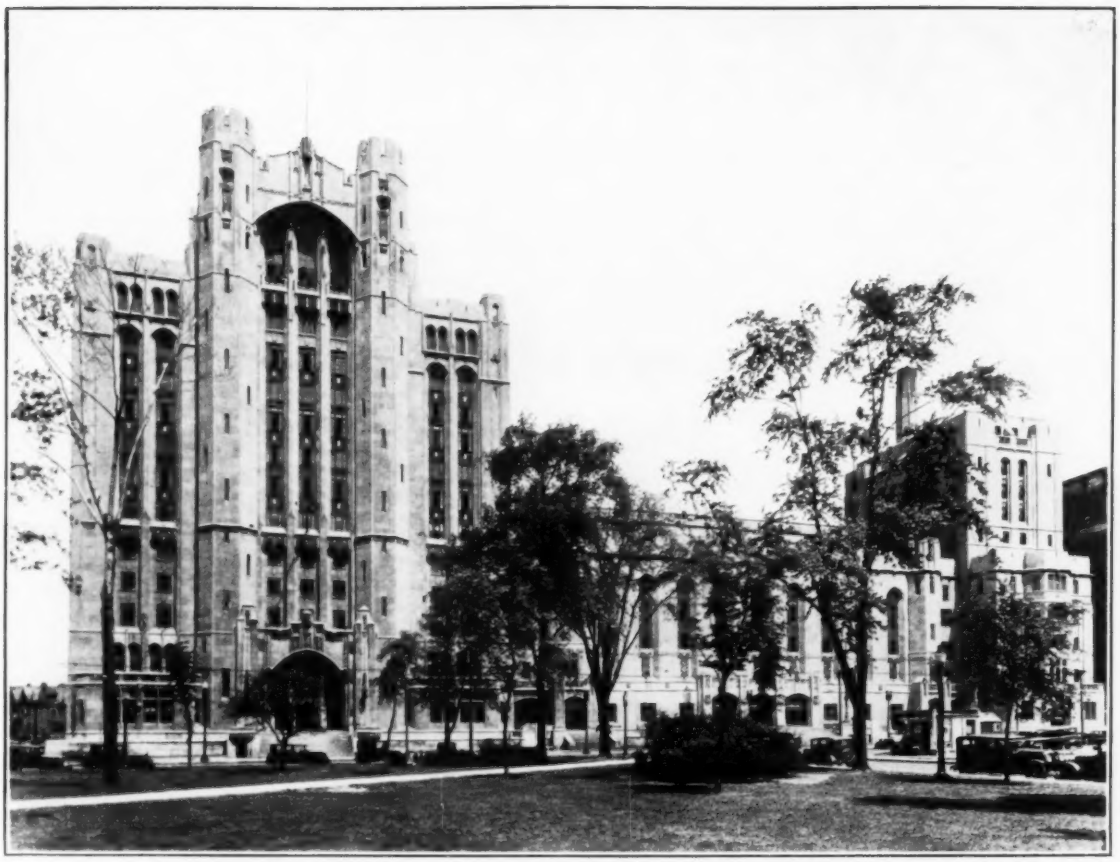
ARCHITECTURAL RECORD SERIES
EARLY AMERICAN ARCHITECTURE



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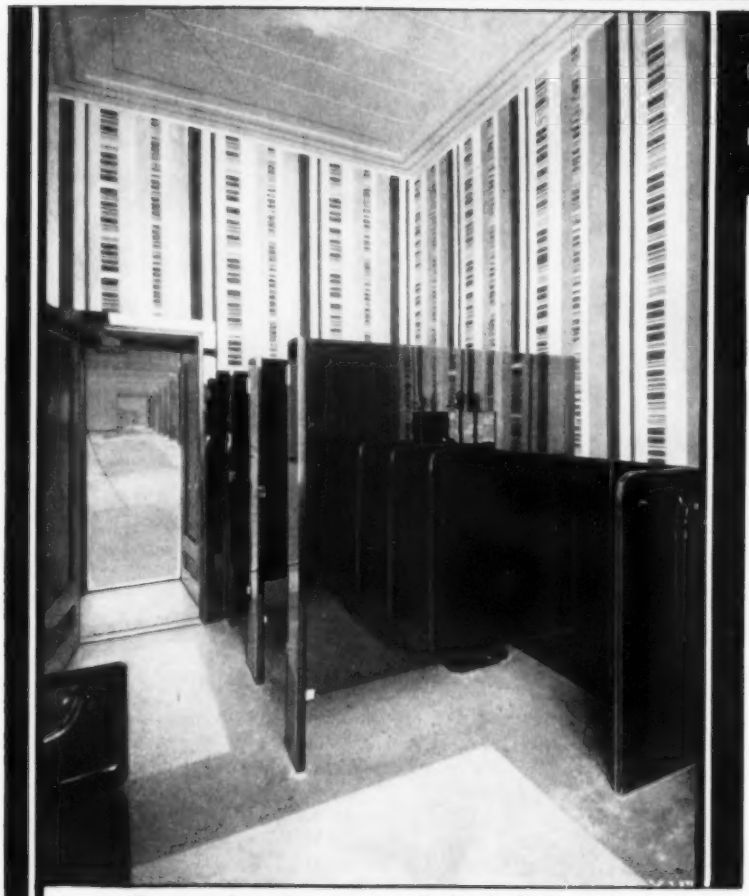

The very modern toilet room in the Administration Building of the Jewel Tea Company, Barrington, Illinois, is of black Vitrolite with silver tinsel paneling. Holabird & Root, Chicago, Architects.

ONLY VITROLITE TOILET CONSTRUCTION HAS THESE NEW FEATURES

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* * *

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* * *

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NO HEAD RAIL

MINIMUM EXPOSED METAL

RIGID CONSTRUCTION

MODERN EFFECTS

ABSOLUTE SANITATION

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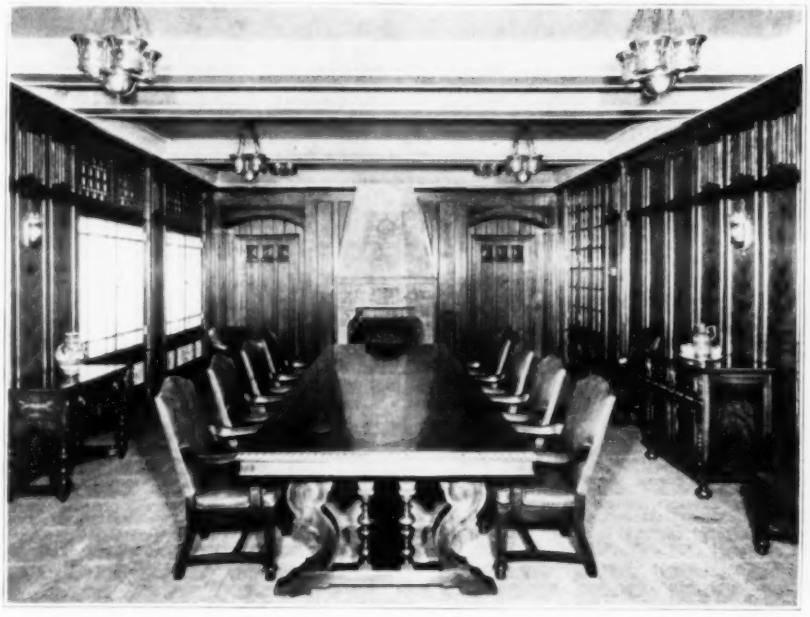
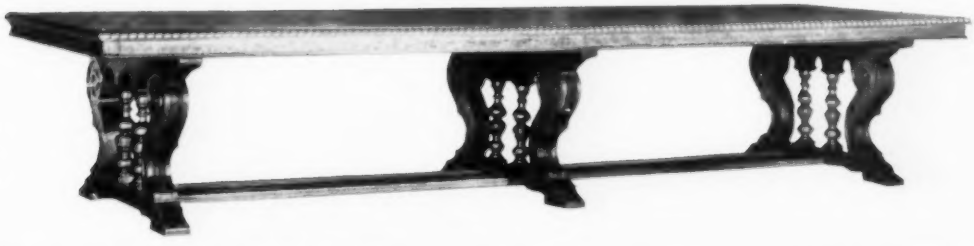


The Room: *Directors' Room of the Mountain States Telephone Company, Denver, Colo. Architect: W. N. Bowman, Denver. Woodworker: Hallack and Howard Lumber Company, Denver*

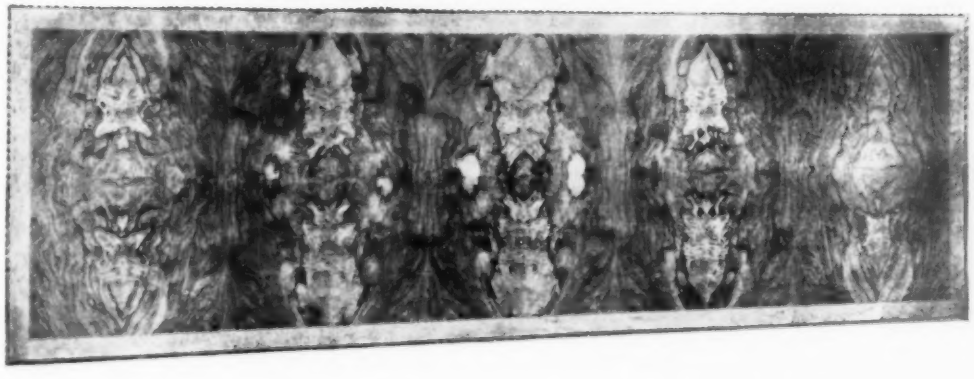
The Table:

A 14-foot table designed and built for this room by the Macey Company of Grand Rapids, Michigan



The Table Top:

Of matched walnut panels, beautiful in figure and harmonizing perfectly with the walnut paneling of the walls



THE artistic effectiveness of a room lies in the appeal of every element of which that room is composed. Walls and furniture alike contribute to the impression. When American Walnut is used for walls, it establishes a motif of beauty and refinement which may be developed in the furniture. In this Directors' Room, for instance, only Walnut could give to walls and table so rich a harmony and interest of figure.

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AMERICAN WALNUT

AMERICAN WALNUT

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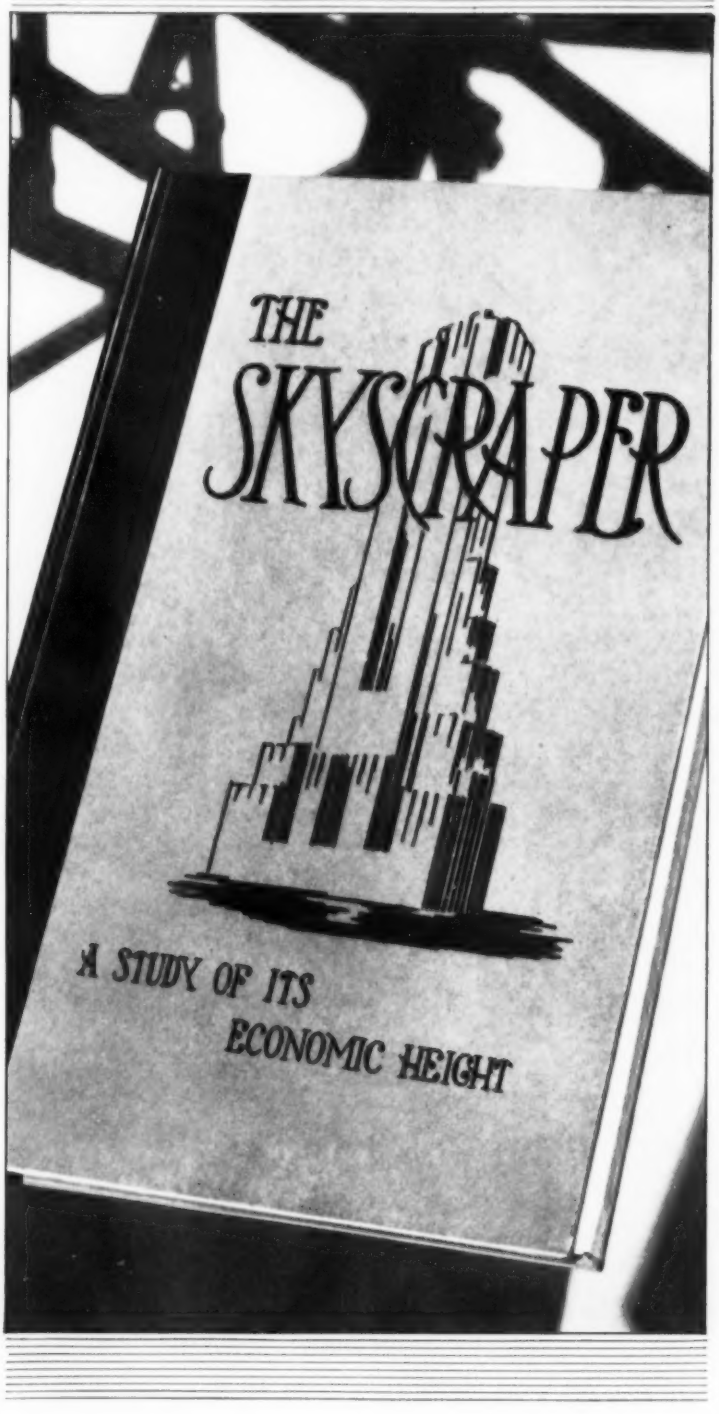

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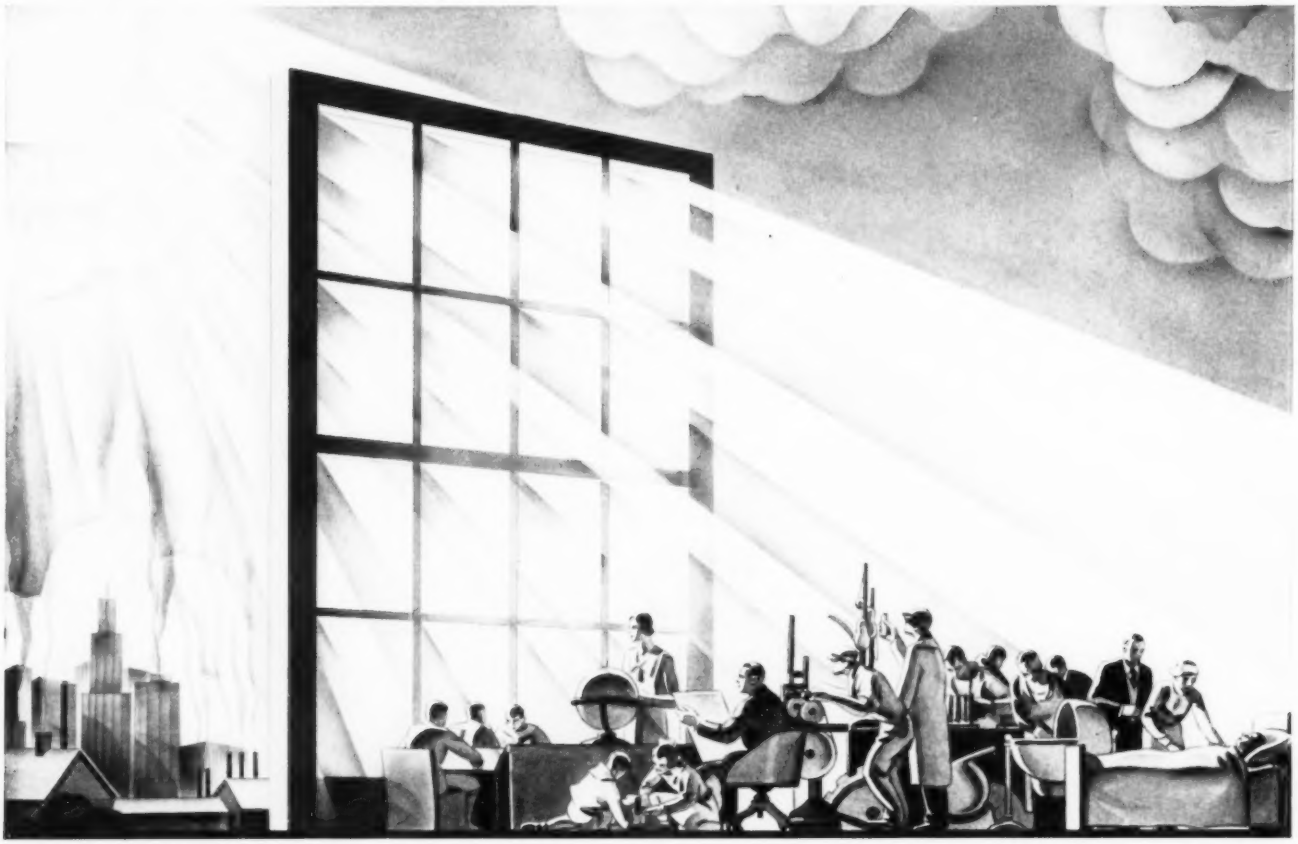

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Steel Toilet & OFFICE PARTITIONS

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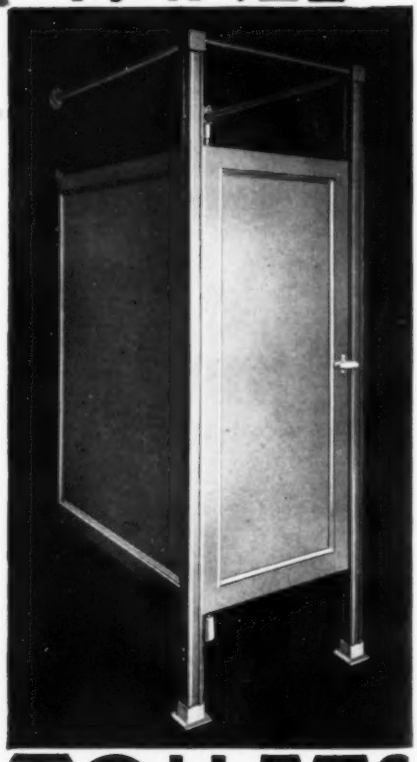
The Sanymetal Symbol

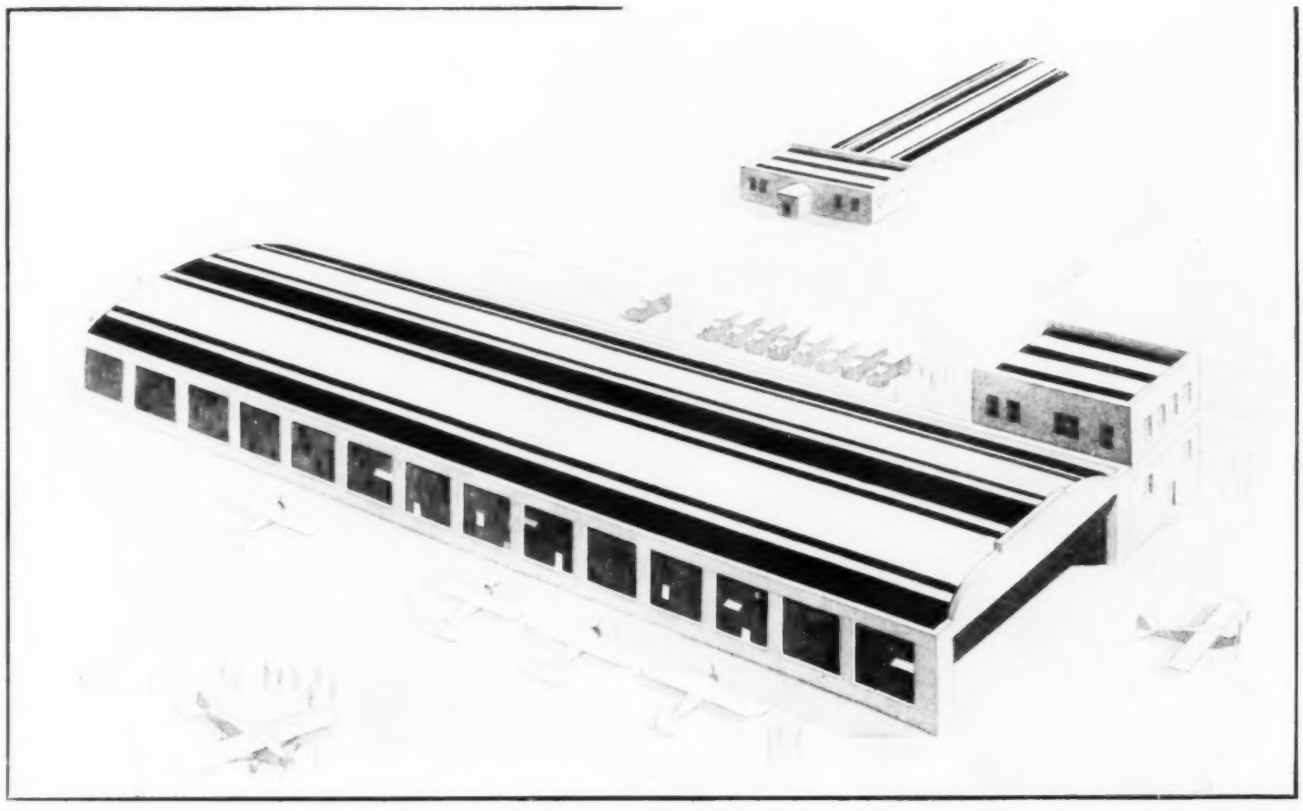
UNIT PANEL



TOILETS

For *every* aviation building
. . . a Carey Roof that "*fits*"

Since eighteen-seventy-three, architectural recommendations for buildings in every phase of the transportation industry have ead: " . . . and a Carey Built-up Roof." *So, it is logical and fitting that the newest (and perhaps the most exacting) member of that great industry should enjoy this same time-proved overhead protection.*



Three "aviation" Specifications . . .

Everywhere, airway terminals, hangars, manufactories, test sheds and repair buildings —structures at foremost aviation fields—are Carey Roofed. With Carey Feltex Built-up Roofing, for large areas subjected to abnormal vibration; with Carey Asbestos Built-up Roofing, where fire hazards and acid fumes are prevalent; with Carey Combination Built-up Roofing, combining in a single specification the super qualities of both Asbestos and Feltex Roofs. And Carey Ready Roofing, of course, specially prepared for temporary structures.

We'd like to mail you our interesting Architects' Specifications Book, with detailed information. Just write.

Carey
BUILT-UP ROOFS

"A roof for every building"

THE PHILIP CAREY COMPANY ✦ *Lockland,* CINCINNATI, OHIO

MODEL of ornamental design in terra cotta used in Toll Building, of the Southwestern Bell Telephone Company, Kansas City, Mo. Hoit, Price & Barnes, Architects. I. R. Timlin, Associated Architect.

Soaring to far, clean heights and glorified by flood-lighting, the famous terra cotta skyscrapers of modern America are no less inspiring than are the sonnets of Shakespeare or the music of Beethoven. Symphonies in clay worthy to rank with the masterpieces of all time, they thrill the most devoted lovers of beauty; the dreamer, the poet, the artist. Yet buildings faced and ornamented with Northwestern Terra Cotta are also symbols of far-sighted thrift; as enduring and economical as they are beautiful.

THE NORTHWESTERN TERRA COTTA COMPANY

DENVER · CHICAGO · ST. LOUIS

A vast network of Republic Steel Pipe constitutes the heating and plumbing systems in this new Midland Bank Building, Cleveland, O.

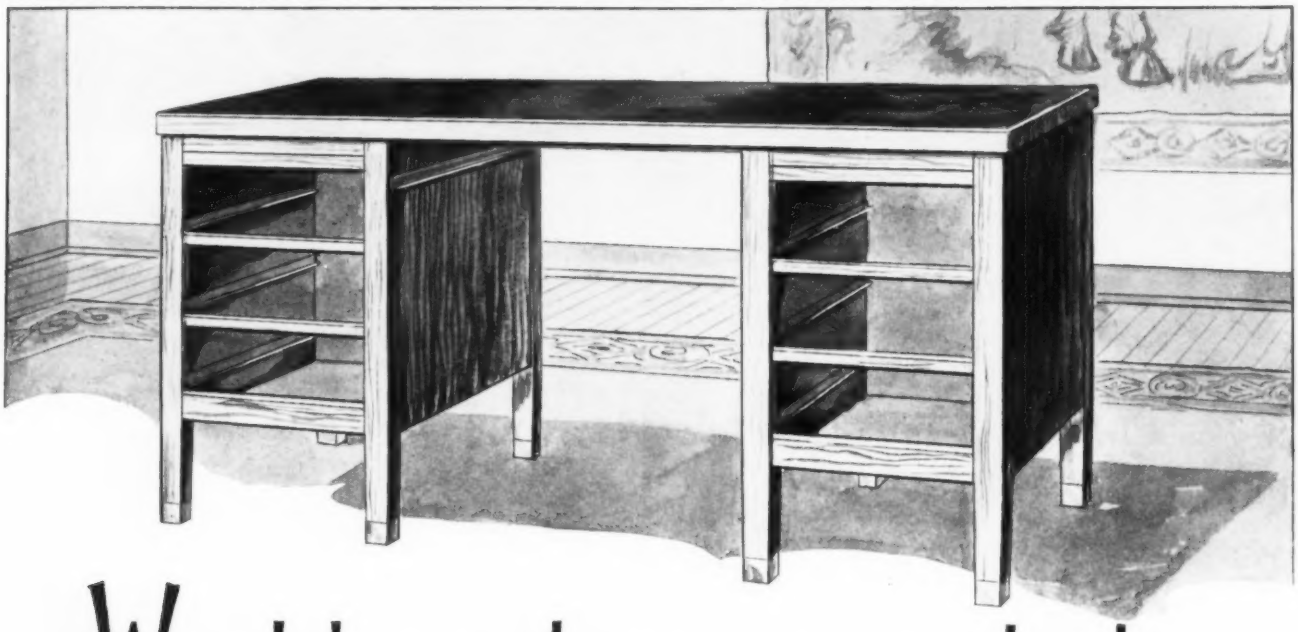
Architects
Graham, Anderson, Probst & White
A. R. Brueggeman—*Heating and Plumbing*

BUILDING PROGRESS ENDORSES REPUBLIC

Bigger and bigger grow our modern business structures . . . higher, more expansive. And the larger the building, the more extensive the piping systems required . . . the more exacting the service demands . . . the greater the need for unfailing pipe. Republic Steel Pipe has once again been selected for the important systems in one of the most recent of modern office buildings—The Midland Bank Building in Cleveland.

REPUBLIC STEEL PIPE

REPUBLIC STEEL CORPORATION. YOUNGSTOWN, OHIO.



Would you buy a new desk without drawers ?

Purchase a desk at one store and the drawers from another? You wouldn't think of doing it! Yet architects overlook the saving in time and trouble which is accomplished by a single specification for Weis METALUNITS. And they miss a definite saving in cost to the owner, too.

Simply by writing Weis METALUNITS in your W. C. door specifications, you cover not only stall doors but hardware—every necessary item—as well. And the doors arrive on the job as UNITS, because the hardware comes with them.

With one specification, you not only save the contractors time, but a great deal of time and trouble in your own office. You know that everything necessary will be available when you specify METALUNIT; you know that it will match and that it will fit.

Let us prove to you how you can save time and expense by specifying stall door and hardware complete as Weis METALUNIT. Send today for folder showing METALUNIT color combinations available. There's no obligation whatever.

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METALUNITS are combinations of flush or panel type doors and the exclusive Weis Universal Gravity Hinge Set with other necessary door hardware items as may be selected. METALUNITS for use on lavatory stall partitions of marble, vitrolite, glass, slate, alberene stone, terrazzo, etc. are manufactured of steel, aluminum alloy, Monel or Allegheny Metal or bronze. METALUNIT hardware is either chromium or nickel plated with either flush or panel type doors available in a variety of interesting colors and finishes.

WEIS
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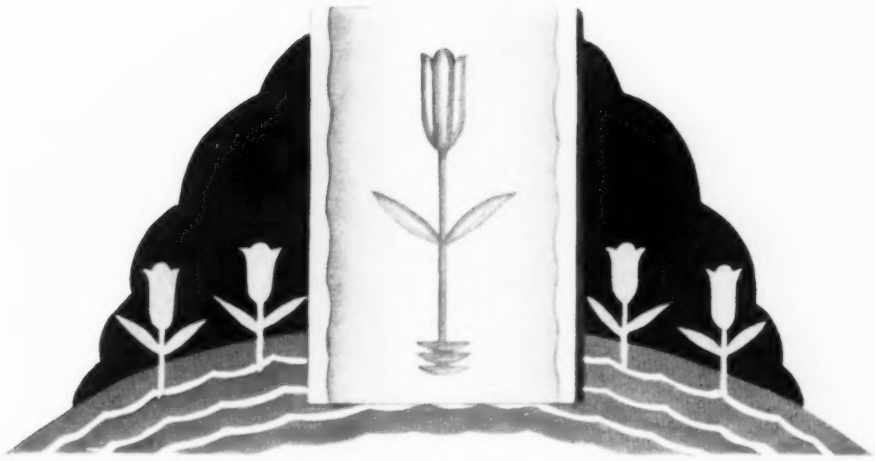
STALL DOOR AND HARDWARE

Turn now to the six-page insert in color in Sweet's, 1930 edition, following page B2388, for full information concerning Metalunits.



A blossom raising its head from the clear water of a mill pond inspired the "Blossom", one of a series of Planatile designs by Leon V. Solon, distinguished ceramic designer.

The newest vogue.. design in tile

ROBERTSON PLANATILE provides the architect an unusual opportunity to create new and interesting effects wherever genuine tile is to be used.

Delightful designs, new dimensions and shapes, and a satin finish offer a flexible medium for new ideas in wall treatment. Our design department under the direction of Mr. Leon V. Solon will cooperate with architects in developing new and unusual effects.

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Please send for my files your new brochure and full data on the new Planatile series.

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MARKET STREET NATIONAL BANK BUILDING, PHILADELPHIA
RITTER & SHAY, Architects and Engineers — WM. STEELE & SONS CO., General Contractors — AMERICAN BRIDGE CO., Fabricators

STATE SAVINGS BANK, ST. PAUL
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A conspicuous feature in the success of Carnegie Beams is their adaptability to all construction requirements, regardless of size or type of architecture. For the towering skyscraper challenging the ingenuity of the most skilled structural steel designers, or the small building requiring only a few tons of steel, Carnegie Beams offer a simplicity of detail, an ease of fabrication and erection, and a flexibility of design never before possible in structural steel. Carnegie Beams possess many unique advantages for those interested in economical and efficient steel construction. They merit your investigation.

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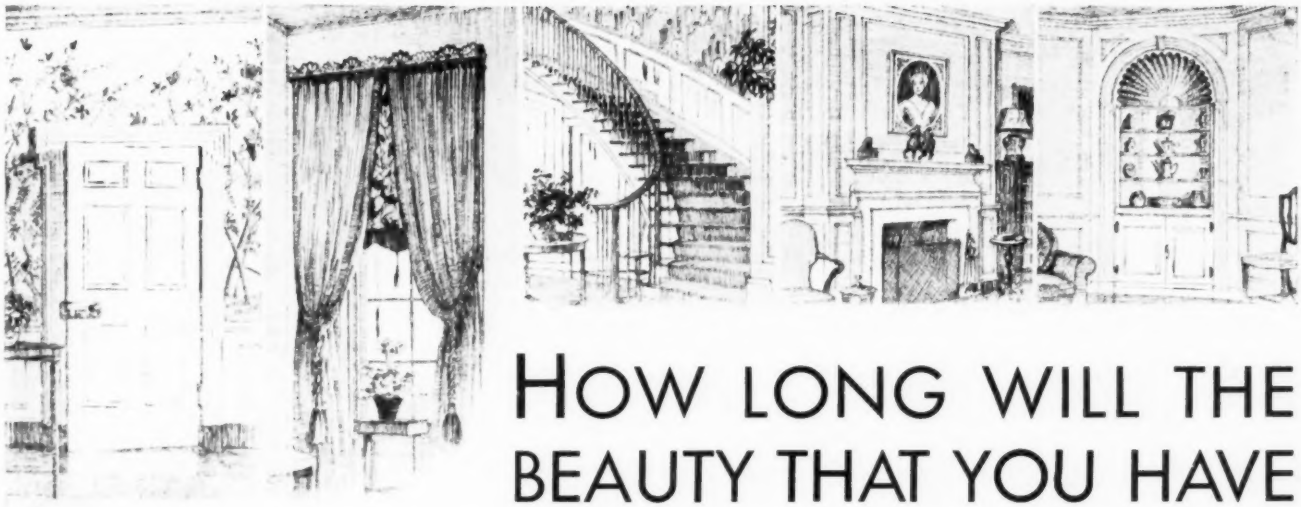
CARNEGIE BEAMS



HOW LONG WILL THE BEAUTY THAT YOU HAVE CREATED REMAIN UNSCATHED ?

IF, from the furnace room, comes a seepage of fumes bearing sulphuric acid, the inevitable product of coal combustion, or grimy vapors of any character, HOW LONG WILL THE BEAUTY THAT YOU HAVE PLANNED ENDURE?

Gas Heating protects that beauty.

Painted and varnished surfaces retain their freshness longest in the gas-heated home. Wall-papers, fabrics and rugs stay cleanest. Over-strenuous daily dusting and seasonal house cleanings do not take expensive toll of the original beauty. The harmony of line, surface and color that you have created does not suffer quick deterioration.

Whether or not your client has considered gas heating, your own artistry deserves that it be mentioned.

BRYANT GAS HEATING

THE BRYANT HEATER & MANUFACTURING CO.
17821 ST. CLAIR AVENUE ·· CLEVELAND OHIO
See Our Catalogue in Sweet's

Chaperoning the client's MODERNISTIC FANCY

When you want interior decoration to parade before the public, custom-built cork floors attract favorable attention

Armstrong's Linotile on the floor and Armstrong's Cork Tile on the walls guard the color harmony of Bullock's Wilshire fur department, Los Angeles, Cal.

MERELY to be told that the color scheme of a modernistic fur shop includes ceiling-panels of cream-white and coral-pink, gold curtains, coral-pink window posts, footstools and mirror trimmings of black edged in coral-pink, taupe chairs, and a coral-orange settee may sound almost bizarre. But a peep into the shop presents an entirely different impression.

You step upon a quiet custom-built floor of Armstrong's Linotile—the foundation of the whole decorative plan! Tailored in interesting contrasts of black, French gray, mole, and dove, there is a restful harmony of color—and design, as well. The striking walls are of Armstrong's Cork Tile. Here, the patron feels, is a shop where one's own personal desires for color and design can be satisfied.

Wherever floors are custom-built, sales settings can be planned for the customer's satisfaction and the merchant's profit. With Armstrong's Linotile, the architect is free to create any motif he desires. He has thirty colors in a score of variously sized tiles to work with.

We suggest that you send for our illustrated book, "Custom-Built Floors of Cork." It gives you complete information about Linotile, and Cork Tile, another hand-laid Armstrong Floor. We'll gladly send you this book without obligation. Armstrong Cork Company, Custom Floors Department, Lancaster, Penna.

Armstrong's (A) *Product*

Armstrong's CUSTOM FLOORS

LINOTILE CORKTILE

3 Sheldon Slate Stepping Stones . . .
. . . and we have reached the House

In April we showed you the garden, in which Sheldon's slates have been so advantageously used; in May the garage, whose Sheldon slate roof makes it a fit subordinate to the residence; and now we have come to the house itself, with its "Roof of Eternal Beauty."

It is the residence of C. M. Day, Jackson, Michigan; Beckett & Akitt (Detroit) Architects, a project which serves as an illuminating example of the beauty of appropriateness of Sheldon colored slates everywhere: inside and out, on the ground and in floors as well as on the roof.

In this particular case the combination selected is that of Sheldon's light and dark unfading greens, weathering greens and grays, and clear and mottled purples, set off with a sprinkling of brown pheasants.

All from Sheldon's own quarries; where, in fact, are found the whole gamut of the colors in which nature yields slate, including the exclusively Sheldon Unfading Arabian Red.

You will find four Sheldon slate roofs, in natural colors, in Sweet's Architectural Catalogue; but those give no more than a glimpse of the practical and beautiful possibilities of Sheldon slates, and we respectfully urge you to consult us on the use of colored slate in any project you may have in hand. And not in the roof alone, but for floors, walks, stepping-stones, etc. as well.

F.C. SHELDON SLATE CO.

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★

Vault Door Design simple enough to match the architecture of any building

Style "Tile" Fire-resistive Diebold Vault Door

IT IS OUR AIM not only to give protection in Diebold Vault Doors, but to design them so that they will add to the appearance of the building. That is why our field men offer full co-operation to architects. ★ ★ The door shown here affords twenty-nine minutes' protection without any grouting, in contrast to the old style plate vault doors that offer only ten minutes' protection when fully grouted. The anti-warp channel reinforcing the front frame, and the deep box tongue of the jambs seal the door against the direct passage of heat into the vault. ★ ★ The cover plate over the boltwork adds to the appearance of the door and prevents soiling of clothing on the working parts. With the necessity of grouting eliminated there is no difficulty in installing the door. See Sweets' Architectural Catalogues for specifications and details.

Diebold Safe and Lock Company

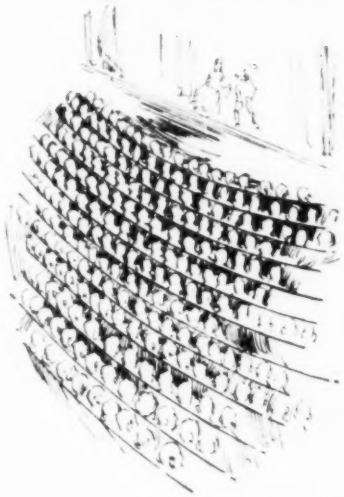
Canton, Ohio

SEVENTY YEARS OF BANK SERVICE

For the Safety of a vast Audience

AUDITORIUM, SHREVEPORT, LOUISIANA—*Architects: Jones, Roessle, Olschner*

Featherweight Concrete
INSULATING ROOF SLABS



Audiences everywhere are assured their proper protection against fire and the elements by a roof of pre-cast concrete. Owners, whether public or private, are protected too, against all expense for repairs, painting or other maintenance.

Featherweight Concrete Slabs are of Haydite aggregate instead of sand. That means *trapped air cells*, bringing the weight down as low as 10 lbs. per sq. ft. and giving an insulating value new to concrete.

Innumerable public buildings are covered with these slabs — Shreveport and Flint Auditoriums — Chicago's Field Artillery and Naval Armories — Adler Planetarium — Detroit Municipal and Wayne County Hangars — Lawrence College Gymnasium — Gateway Theatre and many more. Industrial and railroad buildings add their evidence on the permanent fire-proof, no-maintenance service of this roof. "Catalog and Roof Standards" gladly sent on request.

Made, Laid and Guaranteed by

FEDERAL CEMENT TILE COMPANY

608 South Dearborn Street Chicago

FOR OVER A QUARTER CENTURY

Now *Another School Knows the Value of* BLOX-ON-END Floors

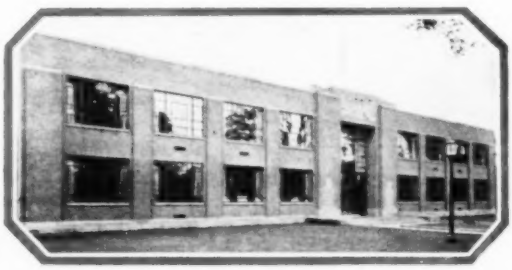
Partial view of shops in State Trade School, Hartford-Conn. Floored with 16,500 sq. ft. of Bloxonend.
CARL MALMFELDT
Architect

ALTHOUGH the above building is comparatively new the students and faculty have already become enthusiastic boosters for Bloxonend floors, because it doesn't take long for a Bloxonend floor to demonstrate its true worth.

Leading School Architects everywhere agree that no other flooring material has yet been found to satisfactorily fill the place of modern Carter Bloxonend for school shops and gymnasiums.

Architects know there are never any splinters or soft places in Bloxonend floors, because the tough end grain is the surface of the floor—they know that Bloxonend of Southern Yellow Pine is exceedingly sturdy and of splendid appearance, is smooth, quiet and resilient—and, that the life-span of a Bloxonend floor, even in a busy school shop, is greater than the life-span of the person who buys it.

Our booklet "School Floors" contains much information of value to the School Architect or official. It also tells how Bloxonend is made, gives specifications for laying and illustrates representative school installations. May we send you a copy? A postcard or letter will bring it promptly.



An exterior view of the State Trade School, Hartford, Conn.

CARTER BLOXONEND FLOORING COMPANY
KANSAS CITY, MO.—*Branch Offices in Leading Cities—See Sweet's*

BLOX-ON-END FLOORING

Lay's Smooth
Stay's Smooth

Bloxonend is made of Southern Pine with the tough end grain up. It comes in 8 ft. lengths with the blocks dovetailed endwise onto baseboards.

Leading School Architects specify Bloxonend Floors for Shops and Gymnasiums in the country's best schools.

PRATT & LAMBERT VARNISH PRODUCTS

THE PASSAVANT MEMORIAL HOSPITAL
McKinlock Campus, Northwestern University, Chicago. *Holabird & Root, Architects; J. B. Noelle Company, Painting Contractors*

TRADE MARK
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REFERRED to as "one of the finest hospital buildings extant," the new Passavant Memorial Hospital of Northwestern University, Chicago, represents all that a modern hospital can be in design, construction, appointments and personnel.

On the interior surfaces of this splendid structure thousands of gallons of Pratt & Lambert Varnish Products have been used to preserve and beautify walls and trim. That 800 gallons of Lyt-all Flowing Flat were applied is testimony to the merits of this super wall coating. Lyt-all Flowing Flat is the highest type of interior flat wall coating made for use on plaster, wall board, etc.

Write or telephone the nearest P&L Architectural Service Department for prompt, practical aid on any finishing problems.

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"Save the surface and you save all"

Oak Floor Blocks throughout these new Chicago apartments

. . . . style, permanence, comfort, economy —

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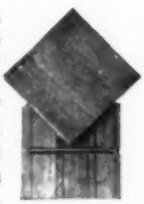
Rissman & Hirschfeld, Architects
Trimmer-Nydele Co., Contractors
100,000 sq. ft.—9" and 11¼" blocks



Each block a complete square unit of three or more oak flooring strips, 13-16" thick, splined together. Laid in EVERBOND, a plastic cement, directly over concrete, without nails. Comfortable under foot; sound-deadening. *CELL*ized* floor blocks of oak, walnut, and Philippine hardwoods, may also be obtained pre-sanded, to be used without finishing other than polishing the *CELL*ized* surface, or waxing, if desired.

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McNally & Quinn, Architects
50,000 sq. ft.—6¾" and 9" blocks

*CELLized blocks laid in these buildings by Kaucher Engineering Co., 612 N. Mich. Ave.

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Hooper & Janisch, Architects
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100,000 sq. ft.—6¾", 9", 11¼" blocks

At left: Fullerton Tower,
Fullerton & Clark Sts.
McNally & Quinn, Architects
56,000 sq. ft.—11¾" blocks

Albert O'Rourke Apts, 76th and South Shore Drive
Leichenko & Esser, Architects
30,000 sq. ft.—6¾" and 9" blocks

***CELLized oak floor blocks are guaranteed by *CELLized Oak Flooring Inc. when laid by Licensed Flooring Contractors. The names of those licensed to use this label in your locality will be supplied upon request.**

LICENSED
CELLized Oak Flooring INC
MEMPHIS TENNESSEE
FLOORING CONTRACTOR

See our catalog in Sweet's: Vol. B, pages 2173 to 2175. Write for suggestions for floor patterns, and novel uses.

CELLized oak floor blocks are sold through lumber dealers everywhere; manufactured by

ARKANSAS OAK FLOORING CO., Pine Bluff, Ark.
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THE LONG-BELL LUMBER CO., Kansas City, Mo.

*CELLized Oak Flooring Inc.

MEMPHIS — TENNESSEE

To make certain that the blocks are properly laid, expert flooring companies, equipped with the technical knowledge necessary to faithfully interpret architect's ideas, have been approved as:

LICENSED FLOORING CONTRACTORS

***CELLized wood block floors are guaranteed by *CELLized Oak Flooring, Inc., Memphis, and must be laid by licensed contractors. The names of those licensed, in addition to the partial list below, will be supplied on request.**

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*CELLized Application Co., 807 Patterson Ave.
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H. W. Helberg . . . . 730 S. 83rd St.
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Bloom, South & Gurney, Inc., 176 Federal St.
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Perry Hardwood Flg. Co., 501 1st Nat'l Bk. Bldg.
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W. J. Briggs . . . . 3958 Division St.
SAN FRANCISCO, CALIF.
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Inlaid Floor Company, 600 Alabama St. at 18th
SEATTLE, WASH.
Seattle Hdw. Flr. Co., 7th Ave. N. and Roy St.
Inlaid Floor Company, 1231 Westlake North
SHREVEPORT, LA.
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Sioux City Flr. Surfacing Co., 1007 Nebraska St.
SOUTH BEND, IND.
G. E. Weaver Company, 623 E. Jefferson Blvd.
SPOKANE, WASH.
American Hardwood Floor Co., 1301 W. Main Ave.
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C. A. Myers Hardwood Flooring Co.
7444 Delmar Blvd.
Walter Rielau . . ,3843 N. Filmore St.
ST. PAUL, MINN.
Luedtke Brothers . . 215 Commerce Bldg.
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TORONTO, 2, CANADA
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John R. Yutzy & Sons . 1675 Western Ave.
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Anchor Certified Floors, Inc., 206 S. Warren St.
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*CELLized Flooring Co. . 15½ W. 4th St.
UTICA, N. Y.
Utica Tile & Marble Co., 20 Elizabeth St.
URBANA, ILL.
E. N. DeAtley . . 207 N. Gregory St.
VANCOUVER, B. C.
British Columbia Hardwood Floor Company
WACO, TEXAS
John H. Perry . . . 202 N. 30th St.
WARREN, ARKANSAS, Dock Jarratt
WASHINGTON, D. C.
Blackwell Flg. Co., Inc., 2101 Georgia Ave., N.W.
Galliher Bros. Flooring Co., 30th and K Streets
Marshall Flooring Co. . 2500 Ninth St., N.E.
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Shannon Flr. Surfacing Co., . 8313 Grand Ave.
WEST PALM BEACH, FLA.
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WHEELING, W. VA.
Amord Realty Company
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The Roy Warner Floor Co.,
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Front and back 6¾" block

***CELLized wood floor blocks are sold through retail lumber dealers.**

*CELLized Oak Flooring, Inc., Memphis, Tennessee

Now Norman Casements

The lower screen panel can be raised to operate the casement

ARE AVAILABLE WITH SCREENS BY CRITTALL

Offered now with standard screens, Crittall Norman Casements are more than ever the ideal windows for fine residential buildings.

Crittall screens—as furnished with both Norman and Stanwin Casements—are attractive in appearance and unusually simple and efficient. They fit snugly and compactly against the window on the inside—and are inconspicuous when in place. The lower screen panel can be raised with the finger tips permitting the window to be operated easily and naturally.

Crittall screens can be installed and removed quickly, without the use of tools. The rigidity of their frames permits storage without damage—an essential feature.

Outward-opening Stanwin and Norman Casements with screens by Crittall are available in a wide variety of standardized sizes and designs.

Upon request we will gladly send you detailed information regarding Crittall Screened Casements. Our complete catalog is in Sweet's —Pages A1131 to A1200.

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CRITTALL CASEMENTS

STANWIN CASEMENTS • • NORMAN CASEMENTS • • UNIVERSAL CASEMENTS

SPEED // EFFICIENCY // ECONOMY

Three words that mark the difference between the old and the new

PARIS TRANSIT SYSTEM MIXED CONCRETE

NOW—Right now, the greatest construction program in all history is in full swing.

In every section of the land, able, aggressive Paris TRANSIT Operators, with great and small fleets of Paris TRANSIT Mixers are speeding up construction on big and little jobs everywhere. From coast to coast, the leading Architects, Engineers and Construction Companies are specifying and pouring Paris TRANSIT System Mixed Concrete, because of its KNOWN and PROVEN advantages.

Right in the middle of the season is no time to experiment or pioneer. With the Paris TRANSIT System, you're backed by years of successful experience of Paris TRANSIT System Operators all over the United States and Canada.

If you can qualify and *act now*, you, too, may enjoy and employ the outstanding advantages of this complete concrete system.

FOR DETAILED INFORMATION WRITE OR WIRE . . .

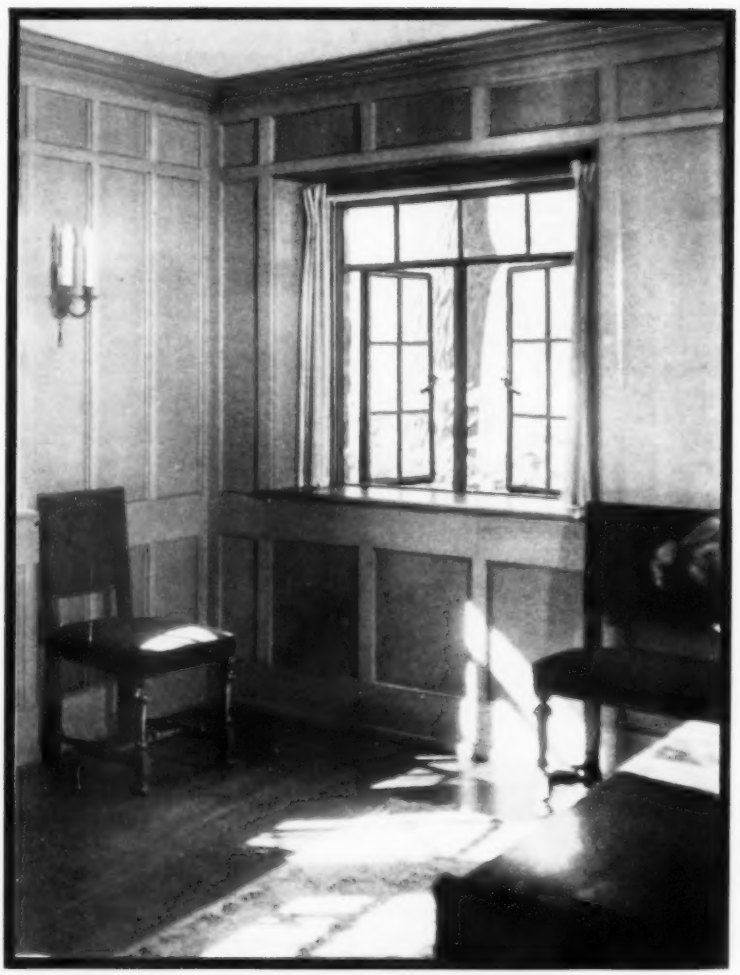
TRANSIT MIXERS, Inc.

Call Building, San Francisco

New York **Chicago** **Vancouver, B. C.**

THEY OVERLOOK NOTHING . . . BUT THE LANDSCAPE!

AT LAST, a casement that provides everything . . . screens, drapery-attachments, beauty of line, practical usefulness over the years. Lupton Casements give an invitation to vagabond breezes, and a definite snub to cruising mosquitoes, flies, and moths.



Here is a casement that will serve and satisfy your clients long after the residence has been occupied. The screens are marvels of convenience. Spring pivots allow them to be attached to the window in 15 seconds. Frames are drilled for both screen and drapery-attachments.

We recommend the use of plate glass.

We have arranged with all our sales-representatives to have them furnish screens, drapery and shade-brackets, and plate glass at the time the windows are purchased. All at minimum cost.

Years of consistent advertising have identified the Lupton name with quality steel windows. It is a reputation which we regard highly, one which we back with the utmost sincerity of craftsman and executive at the Lupton plant.

The cost of these new casements is very little more than that of an old-fashioned window. Made in standard sizes to suit a wide variety of architectural treatments. Consult your current edition of Sweets' catalog for complete details. David Lupton's Sons Co., 2209 E. Allegheny Ave., Philadelphia, Pa.

LUPTON

where steel is fused with sincerity

"Spreads like warm butter"

The TRAIL of the Tiger

Found in America's finest architectural masterpieces, Tiger "Footprints" (ceiling and wall textures and finishes) are unquestioned marks of distinction. ❖ ❖ Down through years of satisfactory service the trail of Tiger Finishing Lime has led to nation-wide recognition and acceptance by building craftsmen. ❖ ❖ Made just a little better than seems essential, it has created a standard which is individual unto itself.

FLEMISH TEXTURE

Another Attractive Tiger "Footprint"

An excellent treatment for ceilings, panels or small surfaces. Many effective two-tone color schemes are used to advantage with this finish.

The KELLEY ISLAND LIME & TRANSPORT COMPANY

"World's Largest Producer of Lime"

LEADER BUILDING ∴ ∴ CLEVELAND, OHIO

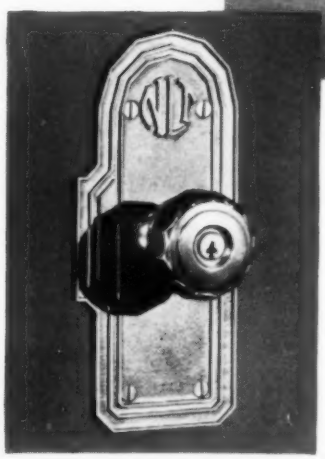
The Famous

TIGER FINISH

And—Tiger Mason's, Tiger Agricultural, Tiger Chemical, Tiger All-Purpose Hydrate in 10-lb. packages, and High Calcium and Magnesium Lump Limes. Also Quickslake (ground quicklime) in paper-lined jute sacks.

WHAT HARDWARE DO YOU NEED?

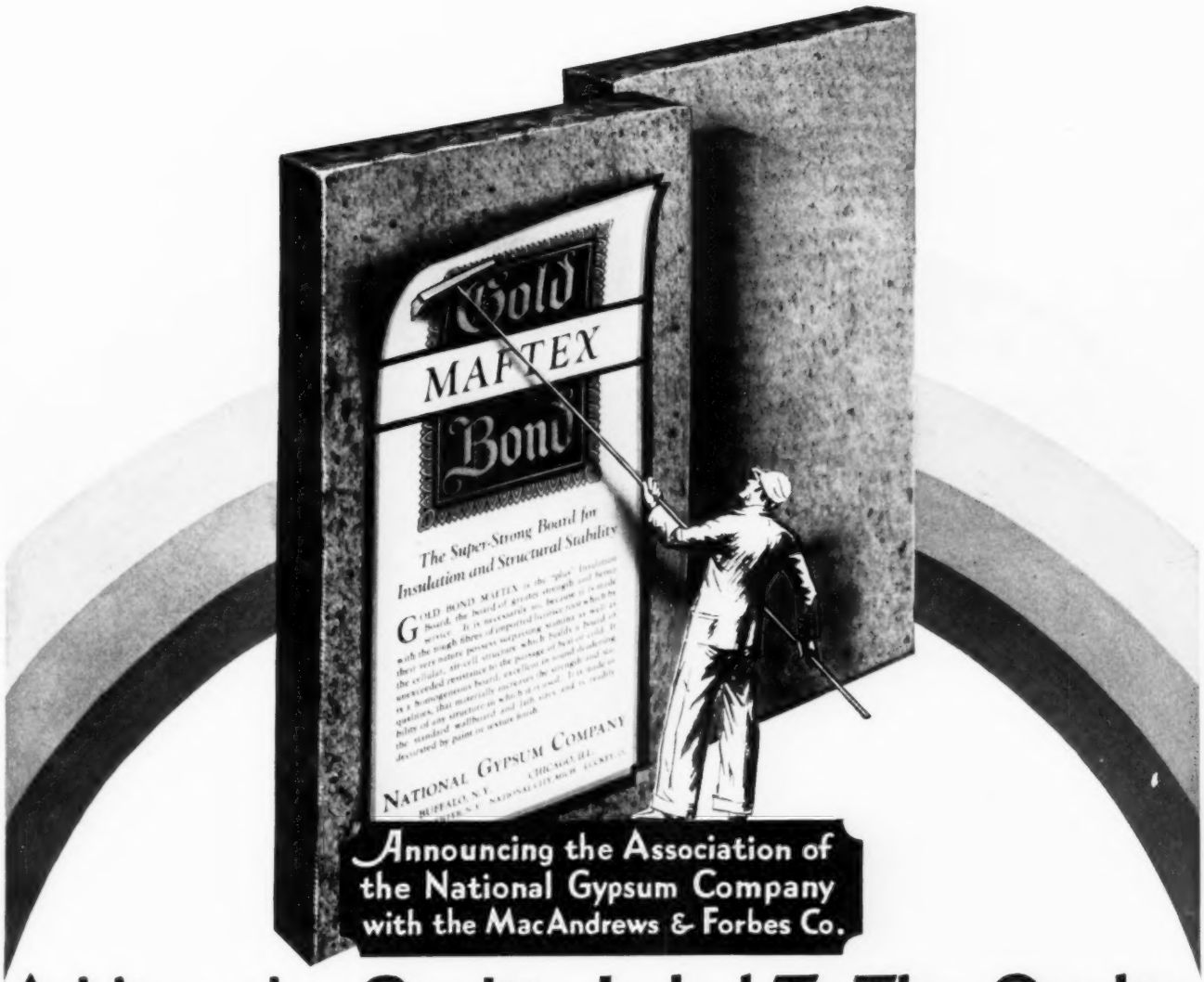
WOULD you build an apartment house, an office building, or a hotel which by every detail of design and equipment shall deserve public preference? Do not neglect Sargent Hardware. In special designs, or in its wealth of regular designs, it contributes to the beauty and smooth usefulness of the country's foremost commercial structures—the Northern Life Tower in Seattle, the Chicago Daily News Building in Chicago, the Chanin Building and the Chase National Bank in New York, to mention only a few of the newer ones. Sargent & Company, New Haven, Conn.; 94 Centre Street, New York; 150 North Wacker Drive (at Randolph), Chicago.



This special design in the Sargent Union Lock was made for the Northern Life Tower in Seattle, Wash. A. H. Albertson, Architect. Joseph W. Wilson, Paul Richardson, Associates.

SARGENT

LOCKS AND HARDWARE



Announcing the Association of the National Gypsum Company with the MacAndrews & Forbes Co.

Adding the Quality Label To The Quality BOARD

COMBINING

the sale of Maftex—the insulation board of "plus" service—with the Gold Bond line of gypsum and lime products, is one of the most progressive steps ever taken in the field of wall materials.

» » In the association of effort now perfected between the National Gypsum Company and the MacAndrews & Forbes Company a new standard of service is assured in the sale and merchandising of insulation board.

» » Maftex brings to the Gold Bond line of wall materials a name and product of proven merit. In the three years that Maftex has been on the market it has won a distinctive rating among insulation materials, because (1) it is the only board made with the tough, undersoil fibers of imported licorice roots (2) it performs maximum insulation service, having the low rating of .337 b.t.u., (3) it adds structural strength to every building where used (4) it has superior nail-holding power and a natural bond with gypsum plaster (5) it is vermin-proof (6) it is sound-deadening and (7) it renders excellent acoustical service.

» » Gold Bond Maftex is the type of product that once used becomes the first choice of architects and builders alike. No matter how well you have known Maftex in the past, you should know it better now. Let us place the complete Gold Bond Maftex program in your hands.

NATIONAL GYPSUM COMPANY

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"PRODUCTS THAT ARE USED TOGETHER, SHOULD BE SOLD TOGETHER"

NO CAUSE
For Worry—

Ink marks, pencil scratches, dirt—stains of all kinds—can be quickly and easily removed from walls finished with Berry Brothers' Delitone. This remarkable material is many times more washable than ordinary finishes. We believe it the most economical and serviceable wall finish on the market. Two coats are sufficient for a perfect job on old or new work. It will positively stop lime burns or hot spots on plaster that is in proper condition for the application of a wall coating. As a prime coat Delitone covers upwards of 750 square feet per gallon. Learn more about this finish. Write for complete information.

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Varnishes Enamels Lacquers
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Manufacturer of wear-resisting architectural finishes

OUR CONTRIBUTION TO THE ART OF HEATING AND VENTILATION

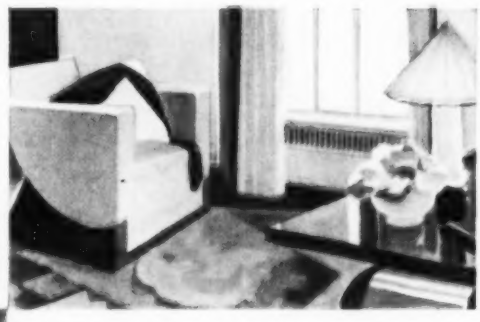
The Herman Nelson Wedge Core Radiator is an exclusive feature of all Herman Nelson Heating and Ventilating Products and accounts for their satisfactory performance. + + + +

THE HERMAN NELSON CORPORATION MOLINE ILLINOIS

BEHIND THAT GRILLE IN THE WALL

there's a radiator that says..."This building is modern"

Bungalow or skyscraper . . . kitchenette apartment or twelve room suite . . . country home or city office . . . modern buildings of every size and type . . . a new-day radiator now heats them all . . . The Herman Nelson Invisible Radiator! Appraised by architects and heating engineers as a vital contribution to the art of heating. Greeted by authorities on interior decoration as the solving factor in an ever-present planning problem. Recognized by builders as a dividend-paying investment.



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During the past several years, there has been a widespread swing to the Herman Nelson Invisible Radiator among builders of fine residences. First, because this radiator, installed within the wall, permits utter freedom in the placement of furniture, and never interferes with the decorative plan. Second, because it effects a decided saving in costly floor space. Third, because it is so scientifically constructed that, once installed, it never requires a moment's further attention.

Now, in response to requests from architects, builders and engineers, this same superior heating unit has been adapted to meet the installation requirements of office and apartment buildings, hotels, hospitals and similar structures. For these larger and taller buildings, a special removable panel is provided, permitting easy access to control valves, traps and all connections. A graduating damper affords instant control of heat output at grille.

The Herman Nelson Invisible Radiator is designed for steam, hot water, vacuum or vapor heating. It is much smaller and lighter than the ordinary radiator of equal capacity. It has no joints to fail and leak steam or water—no parts that can rust or get out of order. It comes complete—ready for installation. Do you have our catalogue? A request will bring you a copy.

THE HERMAN NELSON CORPORATION,* Moline, Ill.

HERMAN NELSON *Invisible* RADIATOR

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*Makers of the *Herman Nelson Invisible Radiator*, for residences, apartments, hotels, offices and monumental structures—the *Univent*, for the ventilation of schools, offices, churches and all buildings having an acute ventilating problem—the *Herman Nelson hi-Jet Heater*, for economical distribution of heat in factories, mills, garages, warehouses, and smaller buildings.

REJUVENATING OLD BUILDINGS

Old buildings suffer by comparison with the new not because their offices are any the less adequate for the transaction of business, but because they are outmoded in appearance. To keep fickle tenants and to meet competition, money must be spent—but it must be spent wisely where it will do the most good. The first move of the La Salle Building owners was to rejuvenate the lobby. Here the crowd perforce stops, here is where it receives its first impression of the building. The new Thorp elevator enclosures, just installed, play a large part in making that impression a favorable one.

THORP FIRE PROOF DOOR COMPANY

MINNEAPOLIS MINNESOTA

Thorp designed the elevator enclosures for the modernized lobby of the La Salle Building, Minneapolis. The panels are etched bronze, the doors steel tube with stippled bronze enamel finish

Specify

THORP DOORS

ROLSCREENED RESIDENCE ON THE ESTATE OF WILLIAM W. WOOD, ARDORE, PA.
Frank Seeburger and Charles F. Rabenold, Architects

. . . "IN my experience, the 'Rolscreen' has been particularly adaptable and satisfactory in its use with steel casement windows,—so much so that I consider them standard equipment in this type of building.

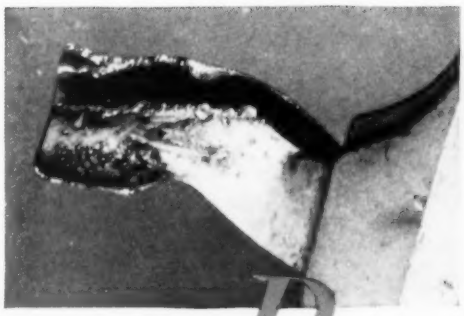
"Without any complaint from any one of a number of installations, I am free to endorse this product and the fine cooperation of the Rolscreen Company of Pella, Iowa."

Chas F Rabenold.

Mr. Seeburger and Mr. Rabenold, in accord with other leading architects of America, find Rolscreens best suited for the screening of fine windows.

Rolscreens
TRADE MARK
PELLA IOWA

Rolscreen Representatives in all Principal Cities . . . See Sweets Catalog Volume B . . . Pages B 2742-46



Burned Contacts *Banished by this* New Switch

. . . With its radically different contact springs

SUBJECT this new Hubbell Toggle Switch to the most severe test. Place it in circuit with the highly efficient type "C" lamps. Give it a year's service. Then open the switch and inspect the contacts. You will find them unharmed. Even the enormous loads imposed by gas-filled lamps fail to burn and pit this switch.

Burning of contacts at the "make" . . . the chief cause of switch failure . . . is eliminated in this new Hubbell Toggle Switch. Hubbell engineers discovered the way after months of experiment. They developed a contact spring of radically different design which overcomes the spring recoil responsible for burning of contacts.

Architects, engineers and contractors can recommend this new switch with the knowledge that it will not fail . . . no matter what type of lamp it may be called upon to control. Many improvements, other than the unique contacts, are incorporated in the new Hubbell Toggle Switch. Take a moment to go over the brief description given here.

Electrically and Mechanically Perfect in Design—"Approved"

A radically new form of contact spring scientifically designed so that two different rates of vibration are set-up in the spring; one tending to counteract the other. Thus recoil is practically eliminated in the ends of the contact spring when the solid metal contact blade strikes between them. As a result, burning and pitting of the spring is prevented.

An automatic "kick off" prevents sticking of blades in contact.

Commutator support is perfectly insulated. Commutator blades rigidly riveted to carrier, insuring positive alinement.

Spring arm is pivoted on a round shaft, seated in a symmetrical bearing, facilitating faster, smoother action without wear.

Operating mechanism is separate from the bridge and perfectly insulated.

A solid bridge with ears lies in a recess across Bakelite cover — entirely insulated; perfect alinement and rigidity insured.

Bakelite case completely encloses mechanism.

A complete line to meet any need—

9801—Single Pole, 5 amps. 250 volts; 10 amps. 125 volts
9802—Double Pole, 10 amps. 250 volts
9803—3-way, 5 amps. 250 volts; 10 amps. 125 volts
9804—4-way, 2 amps. 250 volts; 5 amps. 125 volts
9805—Single Pole, 20 amps. 250 volts
9806—Double Pole, 20 amps. 250 volts

HARVEY HUBBELL, INCORPORATED
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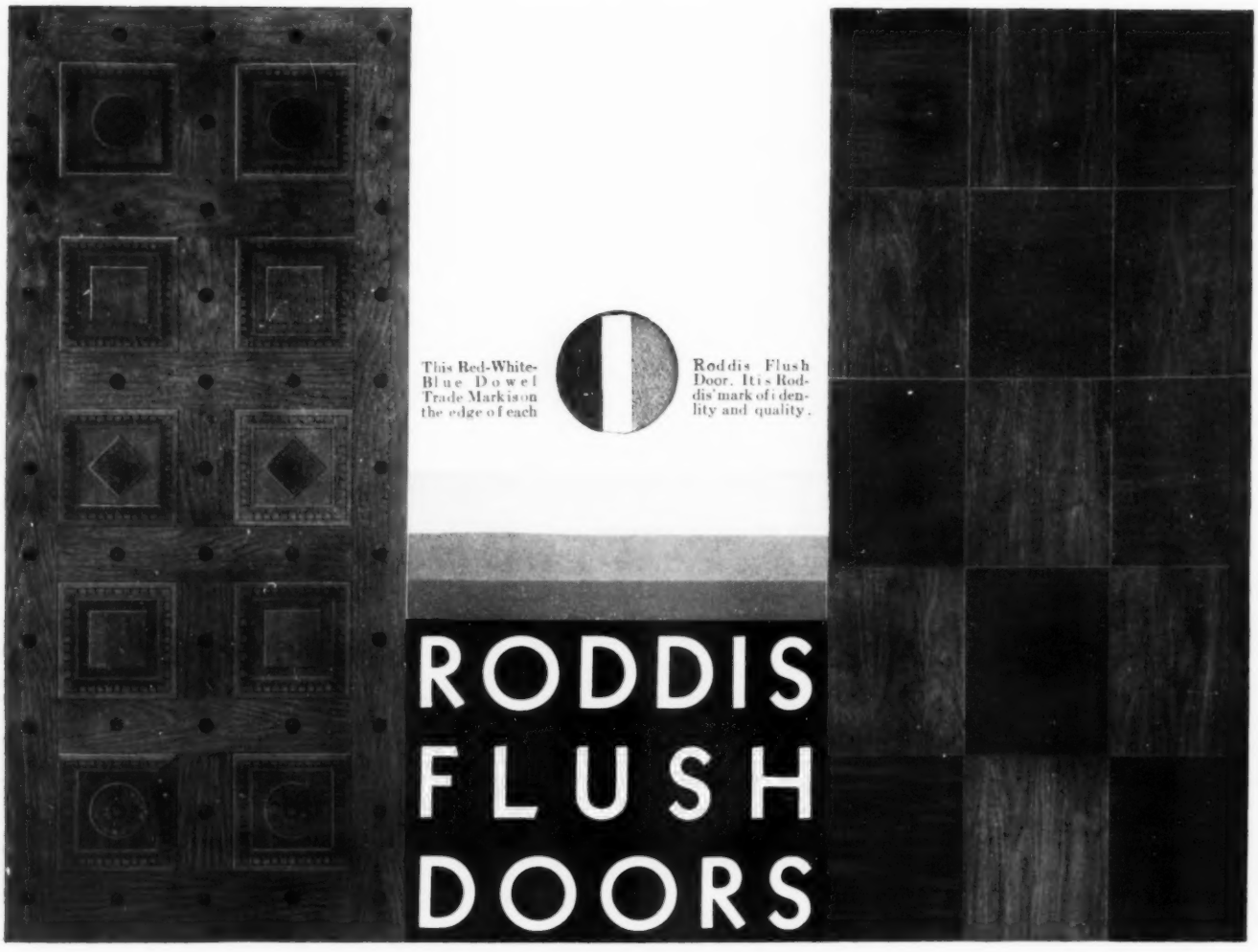
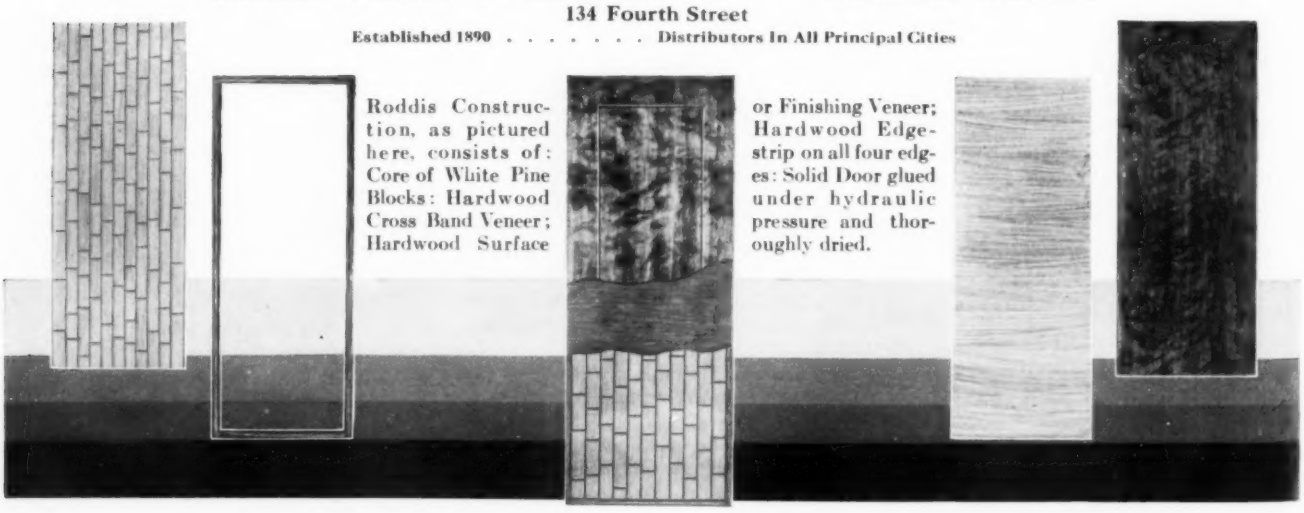
HUBBELL
Toggle Switches

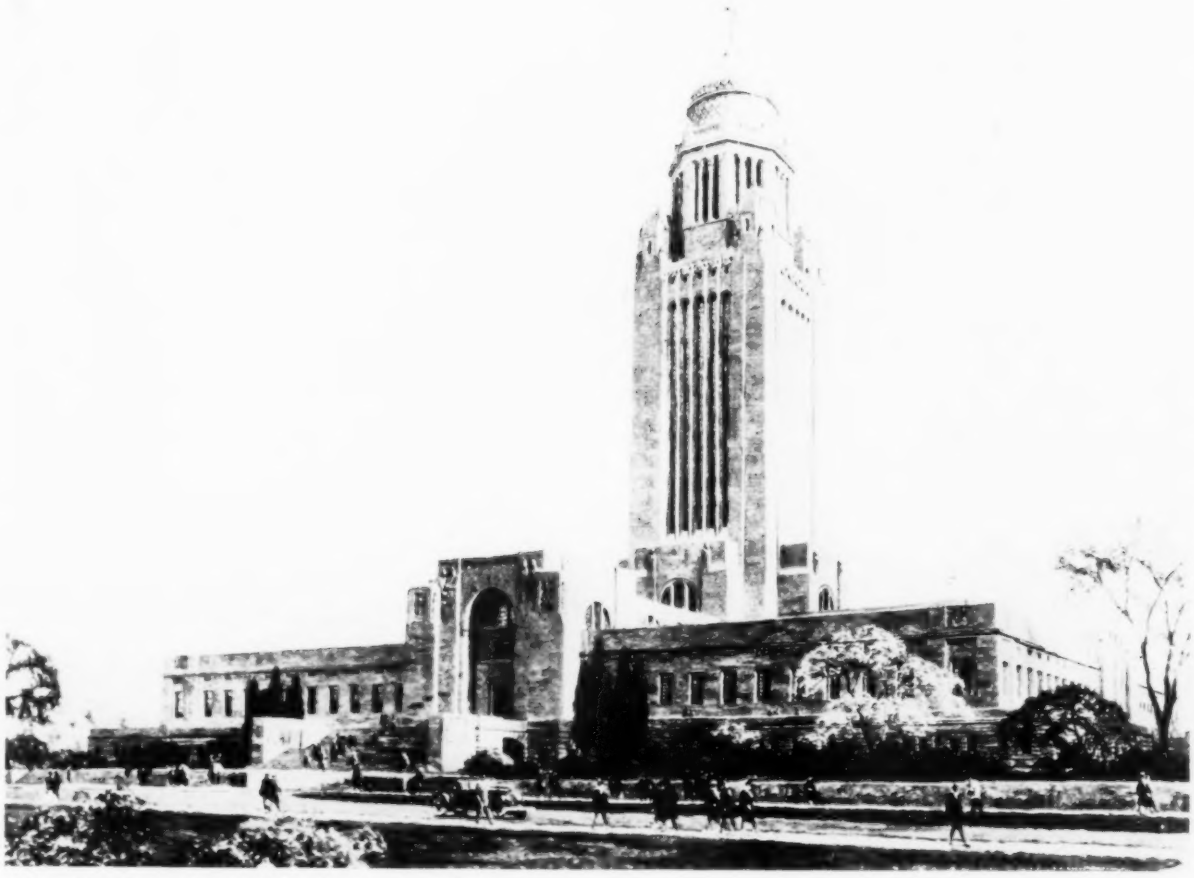

This Red-White-Blue Dowel Trade Mark is on the edge of each
Roddis Flush Door. It is Roddis' mark of identity and quality.
RODDIS
FLUSH
DOORS

FANCY work, of the character illustrated above, is also had in Roddis Flush Door construction, detailed below. The door at the left is of special sawn white oak with hand carved mouldings and ornaments. The door at the right is of one-eighth inch black walnut face veneer laid in squares and V-grooved on all joints. Two expressive examples of Roddis custom designed possibilities, with Roddis completely solid door construction.

RODDIS LUMBER & VENEER CO. . . . Marshfield, Wisconsin
134 Fourth Street
Established 1890 . . . . . Distributors In All Principal Cities



Roddis Construction, as pictured here, consists of: Core of White Pine Blocks: Hardwood Cross Band Veneer; Hardwood Surface or Finishing Veneer; Hardwood Edge-strip on all four edges: Solid Door glued under hydraulic pressure and thoroughly dried.



New State Capitol, Lincoln, Nebraska. Architect, Bertram Grosvenor Goodhue, Associates, New York; Contractors, Peter Kiewit & Sons, Omaha. Ohio White Finish used.

Two important features of Nebraska's new capitol

THIS imposing building, beautifully designed, staunchly built, has two important features.

A plaster job that provides good acoustics—sound is absorbed, the echo defeated, transmission of noises from adjacent rooms minimized.

An interior plaster finish that will preserve through the ages the decoration applied to it.

These two advantages were secured through the use of *original* Ohio White Finish.

See Page B-1981
SWEET'S

OHIO HYDRATE & SUPPLY CO.
WOODVILLE • OHIO
Charter Member of the Finishing Lime Association of Ohio

For BETTER PLASTER Specify
OHIO WHITE FINISH

Our lime is marketed under four brand names—Ohio, Hauk Spread, Woodville, Buckeye. All are of equal quality—all are packed in Red Zig Zag Bags

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Architects
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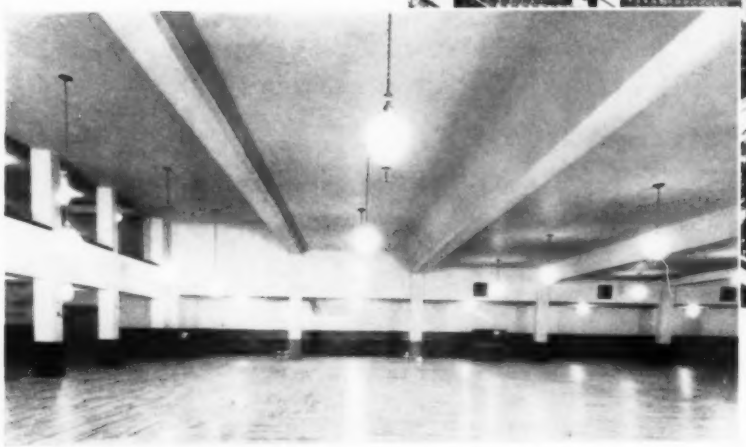


Auditorium (above) and Ballroom (left) are plastered with lime and have remarkably good acoustics.

LIME PLASTER for Better Acoustics

THE ability of lime plaster to absorb sound is definitely demonstrated in Ararat Temple of Kansas City, Mo.

To assure good acoustics lime plaster was chosen for the auditorium and ballroom. Since the building has been in use, members report that everyone has noticed a marked difference in the acoustics of these two rooms as compared to the rest of the building. The acoustics of the two lime-plastered rooms are excellent, whereas considerable ringing is noticeable in all other rooms.

Architects are relying more and more upon lime plaster, not only for better acoustics, but also for sharpness of detail in design and for enduring attractiveness.

Lime is the only time-tested, all-purpose plastering material. Progressive architects who keep abreast of the latest developments are specifying lime for the better class buildings --theatres, churches, the finer residences and apartments.

Have you sent for your copy of our new specifications for lime plaster? Write today for A.I.A. Document No. 21A1.

Rely on LIME
-tested by time

NATIONAL LIME ASSOCIATION

An organization of leading lime manufacturers formed to encourage a better appreciation of the economic value of lime in all its uses.

142-A

713 Phillips Building « WASHINGTON, D.C.

TURNING PLANS INTO REALITY

WESTERN UNION TELEGRAPH COMPANY BUILDING, NEW YORK

TODAY—the development of American architecture has reached a plane that holds the undivided attention — the admiration and acclaim of the entire world.

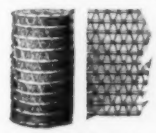
Today—the architect and builder are causing vast edifices to tower more and more toward the sky—to stand as enduring monuments to present standards of design and efficiency of materials.

Today—as in years past—the American Steel and Wire Company is supplying a major portion of the wire fabric (the steel backbone of concrete) that enables plans to be turned into reality.

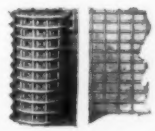
So—we take justifiable pride in the confidence engendered by our products—and extend the full services of our engineering and technical staffs to the solution of specific reinforcement problems. Write to our nearest sales office for information and literature.

WIRE FABRIC

THE STEEL BACKBONE OF CONCRETE



Triangle Mesh Wire Fabric Reinforcement. Furnished in rolls or sheets.



Electric Weld Wire Fabric Reinforcement. Furnished in rolls or sheets.

Western Union Telegraph Company Building, New York, Voorhees, Gmelin & Walker, Architects. Marc Eidlitz & Son, General Contractors. Senn-Herricks Corp., Fireproofing Contractor.

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JOHNS MANVILLE
JM
PRODUCTS

The new Johns-Manville Asbestos Shingles are designed as to texture and color to provide materials from which you may choose a roof suitable to virtually every type of house. In the accompanying illustration we show a closeup of Johns-Manville Asbestos Shingles in place on a roof. Ample thickness provides interesting shadow lines, while the texture of the shingles themselves is also attractive. We believe that by using Johns-Manville Asbestos Shingles you can obtain not only a safe, permanent roof but also the effect you desire.

Johns-Manville
RIGID
ASBESTOS SHINGLES

JOHNS MANVILLE
JM
PRODUCTS

Harmonious colors in Asbestos Shingles

An outstanding Johns-Manville achievement

TO say that Johns-Manville Asbestos Shingles are available "in a full line of colors" would be to employ a commercial phrase suggesting the usual assortment of harsh, glaring tints of red and green commonly found in manufactured roofing.

We do offer "a full line" but all colors show the restraint of well informed aesthetic taste. These colors and blends have been developed with a view to harmonious results when used in various combinations, also when seen in relation to other materials.

Thought has likewise been given to the needs both of traditional and so called "modern" design.

For example, there are the Salem grays. In these shingles we have permanently caught the interesting grays of the old weathered New England farmhouse roofs. In other types, harmonious blends adaptable to Tudor and early English tradition, both in color and texture, are obtainable. In still others, the modern flair for more colorful enrichment, without bizarre effect.

The coloring of J-M Asbestos Shingles is but one of their merits. They also have the thoroughly practical advantage of being fireproof and resistant to weather exposure. Properly laid, they may be considered entirely immune to damage for the life of the building which they cover. Repair and maintenance cost may be dismissed as an entirely negligible item.

Made with a Definite Aim

One thing particularly we wish to stress. J-M Asbestos Shingles are manufactured to do a definite job, to combine features not found in natural materials. They are thoroughly intelligent examples of the age of fabricated materials.

Our Architectural Representatives are equipped to serve you with expert advice with reference to matters of proper application to obtain the particular effects desired. Whether it be Rigid Asbestos Shingles, or any of the many Johns-Manville products which enter into building, our men are available for intelligent cooperation.

PRODUCTS FOR THE BUILDING INDUSTRY

Acoustical Materials · Asbestocel Pipe Insulations · Asbestos and Asphalt Shingles · Built-up Roofs
Home Insulation · Insulating Board · Transite · Tile Flooring · Floridene Stone

Johns-Manville

New York Chicago Cleveland
San Francisco Toronto

Pink Tennessee in quiet, enduring rubber

Here is a striking example of the new freedom enjoyed by architects in their use of modern building materials. The floor of this corridor is Stedman Reinforced Rubber Tiles of Pink Tennessee, with borders of Verde Antique. Yet there is no suggestion of "imitation"—no attempt to simulate a marble floor. Pink Tennessee was selected because this color type met the decorative needs. Stedman Reinforced Rubber Tiles were used because they provide a silent, comfortable, and wear-resisting floor—a fact proven by more than eight million square feet installed in institutional buildings throughout the country. • • • Make full use of color. Stedman Tiles offer 27 practical color types—illustrated in a comprehensive color chart you may have without obligation. • • •

STEDMAN RUBBER FLOORING COMPANY, SOUTH BRAINTREE, MASS.

*REINFORCED: In the Stedman Process minute cotton filaments, uniting with the rubber under high pressure and heat, are responsible for its unusual resistance to wear and distention, its lasting resilience and smooth impervious surface—characterized by color veinings of remarkable fineness and beauty.

Stedman Reinforced* Rubber Tile

CONTINENTAL Illinois Bank and Trust Company, Chicago. Graham, Anderson, Probst & White, Architects, Chicago.

Corridor Photograph Copyright by E. L. Fowler, Chicago.

A Corridor on the Fourth Floor. The field and lighter borders are Pink Tennessee, each large panel in square tiles laid with the grain alternating. Narrow strips are of Verde Antique, a rich black with veinings of sea green and cream.

Holds itself out—and *Holds on!*

NEVER before such a remarkable spot-stopper. Insures trouble-proof painting on plaster! "Holds itself out," and seals against suction, lime, alkali and moisture spots! Will not penetrate substances as porous as newspaper, yet holds on with a never-let-go hold, and adds elasticity to finishing material! Here's a test piece of tin, undercoated with Wallhide, and over it a poor grade (not Wallhide) finishing coat. It actually requires prolonged bending and rebending of the metal to fracture the cheap, naturally brittle outer coating, so protective is the help of the Wallhide undercoat. And the undercoat itself is unblemished.

Velumina Wallhide

First Coater and Finishing Flat

A new type product that trouble-proofs painting on plaster as never before possible.

Velumina Wallhide First Coater usable under any flat wall paint — securely seals as no other product or material against moisture, lime, alkali and suction spots!

Velumina Wallhide Finishing Coat —seals places skipped by first coater or where knobs of plaster have been knocked off. Tintable with oil colors to soft mellow tones. Easy to wash! Great coverage and hiding!

Write for booklet "Velumina Wallhide — the Great Spot-stopper!"

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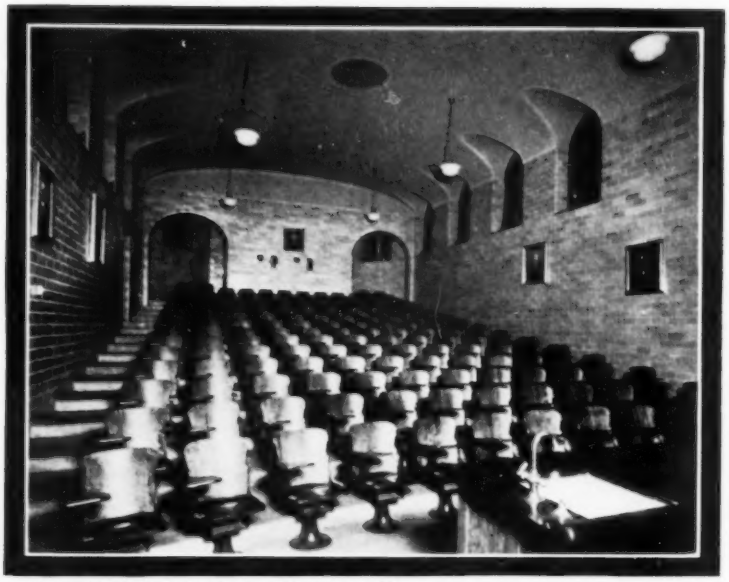
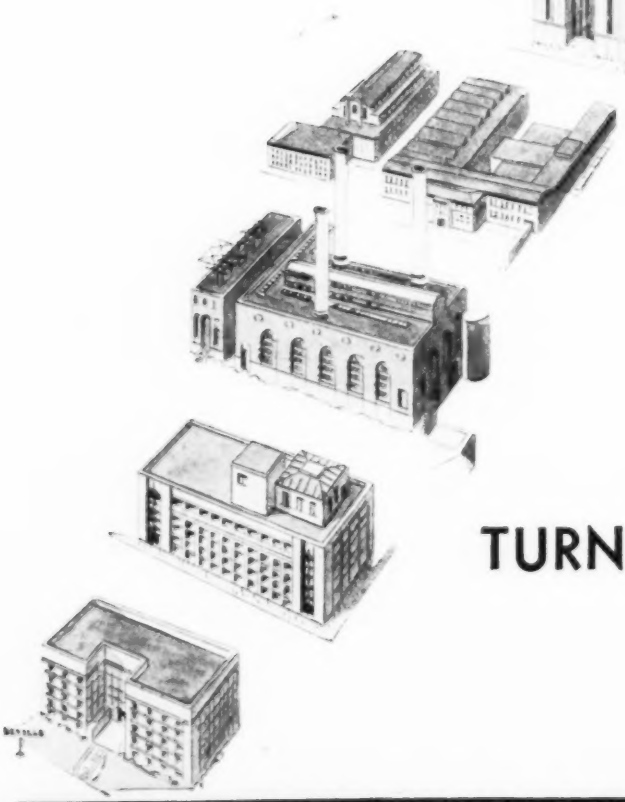


Natco Vitritile in Jefferson Medical College, Philadelphia, Pa. Horace Trumbauer, Architect; Doyle & Co., Contractors.

FOR SOME APPLICATIONS *in Every Building* FOR EVERY APPLICATION *in Some Buildings*



WITH a multiplicity of standard sizes and shapes that suit practically every condition and dimension and a range of beautiful shades to meet wide color-design requirements, Natco Vitritile (glazed and enameled) is a building material of infinite possibilities.

The load bearing units, finished both sides, can be used in exterior walls and partitions, on which no painting, plastering, or other finish is ever required. The units finished one side can be used for a variety of interior work. Kerfed units are available for furring.

Bullnose closures, sill, and lintel tile; wainscot, cove base, chamfered corner tile; these and numerous other types permit the obtaining of striking and unique effects.

Natco Vitritile brings to designer, builder, and user, immediate and permanent satisfaction.

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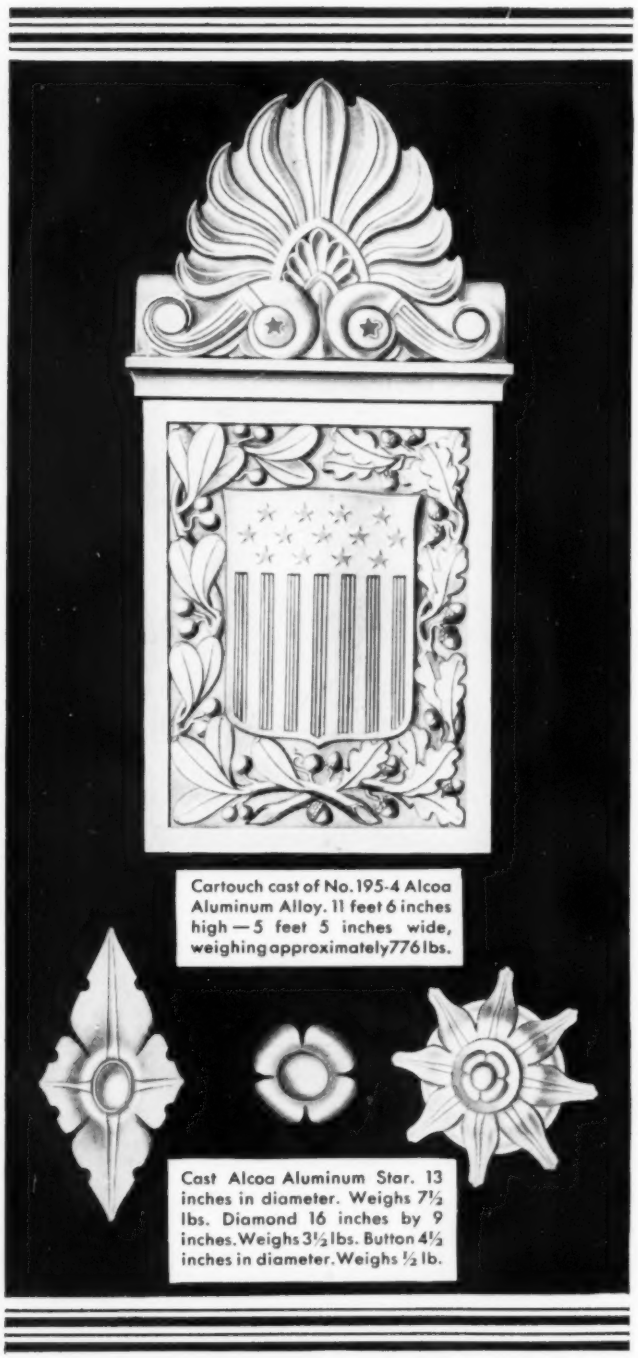
Bascule draw span for Arlington Memorial Bridge at Washington, D. C. McKim, Mead and White, architects. Phoenix Bridge Company, Phoenixville, Pennsylvania, contractors for bascule span. Decorative castings, balustrade, balustrade cap, base and rail, etc., of Alcoa Aluminum. See next two pages for particulars.

Draw Span of Arlington Memorial Bridge



Cartouch cast of No. 195-4 Alcoa Aluminum Alloy. 11 feet 6 inches high — 5 feet 5 inches wide, weighing approximately 776 lbs.

Cast Alcoa Aluminum Star. 13 inches in diameter. Weighs 7½ lbs. Diamond 16 inches by 9 inches. Weighs 3½ lbs. Button 4½ inches in diameter. Weighs ½ lb.

Lightness with Strength

The Arlington Memorial Bridge, of which McKim, Mead and White are the architects, is one of the outstanding works of monumental architecture.

About 50,000 pounds of cast Alcoa Aluminum are being used on the bascule draw span for the cartouch and keyblock, for decorative castings, for balustrade, balustrade cap, base and rail, and for bed molding and torus molding. By using Alcoa Aluminum for these parts of the draw span, a dead-weight saving of approximately 100,000 pounds will be secured. Any other metal that might have been used would weigh roughly 3 times as much as the Alcoa Aluminum.

For decorative purposes, the cartouch here illustrated, was used on each side where the bascule leaves meet. The small ornaments, of which there are hundreds, were used in the load-carrying substructure of the lift section.

By using the light, strong Alloys of Alcoa Aluminum for both structural and decorative architectural purposes you are assured of maximum strength, coupled with extreme light weight. Alcoa Aluminum is much easier to truck and erect. In addition, Alcoa Aluminum does not require painting as a protection against rust. Alcoa Aluminum cannot rust and it therefore will not

relieved of 100,000 lbs. dead-weight

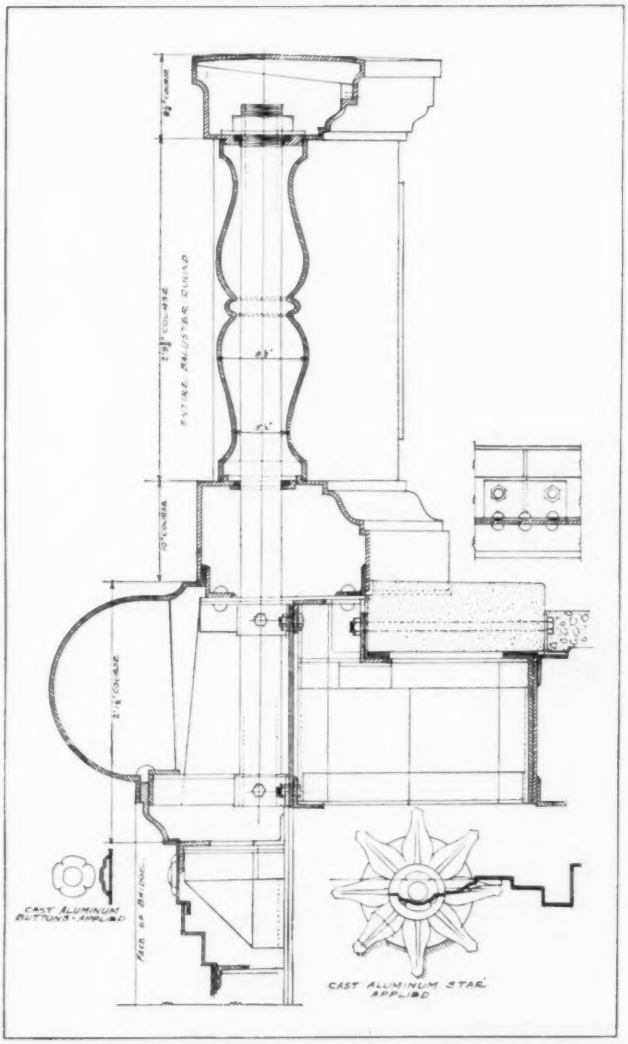
streak adjoining surfaces. This modern metal possesses great ductility—a characteristic that eliminates many of the difficulties encountered in erecting other metals. Alcoa Aluminum can be easily fitted into the irregularities in stone work.

On commercial and institutional buildings Alcoa Aluminum is being extensively used for spandrels, cornices, doors, grille work, newels, ornamental fences, panels, skylight and window frames, ventilators and sheet roofing.

Specifications

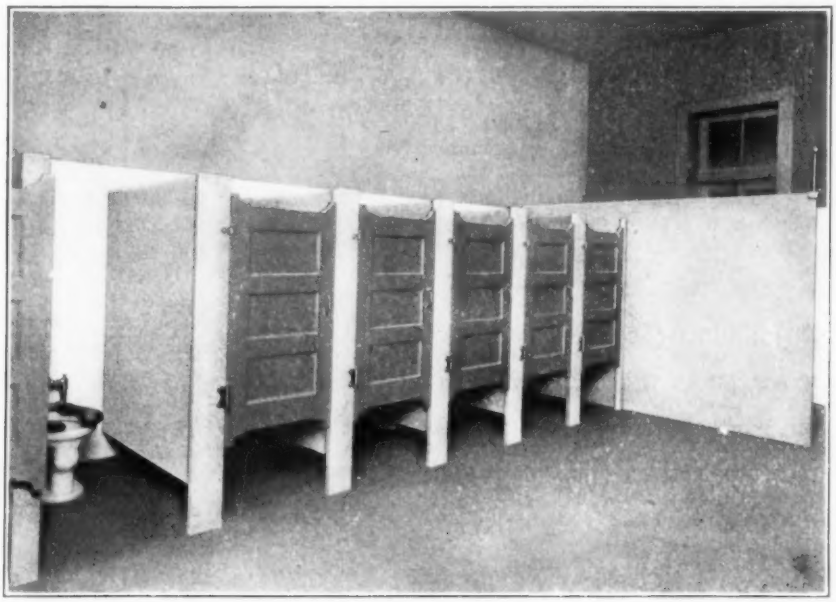
These aluminum cast items were made to Navy Specifications No. 46-A-1a, which correspond to Alcoa Aluminum high tensile strength Alloys No. 195-4. This Alloy is specified where tensile strengths are required higher than those offered by No. 43 Alcoa Aluminum Alloy, which is customarily used on architectural work.

Our nearest office will be glad to talk with you about the architectural use of Alcoa Aluminum and its light, strong Alloys that have been developed for use in this field. Address ALUMINUM COMPANY *of* AMERICA; 2467 Oliver Building, PITTSBURGH, PENNSYLVANIA.



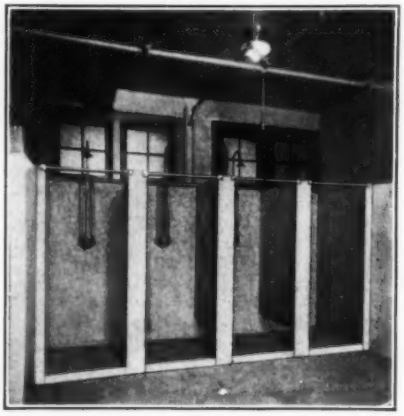
ALCOA

ALUMINUM



Suitable for Country Clubs and Schools—

permanent, sanitary, economical Alberene Stone



The use of 4-inch curbs is recommended as a safety measure.

A large shower compartment installation of Alberene Stone.

The major requirement for both shower compartments and toilet partitions is absolute sanitation and cleanliness. Alberene Stone, because of its close-grain density, is practically non-absorbent, which assures not only ease of cleaning and sanitation but long life. Being highly resistant to acids and alkalis, this Virginia soapstone can be said to be non-staining. Its use provides floors that are non-slipping—wet or dry. The natural light blue-grey color is pleasing and harmonious.

These qualities plus the structural soundness of Alberene compartments make for permanence and economy because there is no expense for upkeep or repairs.

Complete data and specifications are contained in our catalog which will be sent, gladly, on request.

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TOILET PARTITIONS and SHOWER COMPARTMENTS

Need a gas mask ?

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Inspecting or cleaning a sewage pump need no longer be a "gas mask job"

INSTALL A *Jennings*

which is located above the pit where it is easy to get at

HERE is a sewage pump that is easy to take care of. Installed entirely out of the pit, the pump, driving motor and controls always are accessible.

Nothing is submerged except the suction pipe. The interior of the pump can be laid open, and the impeller removed for inspection and cleaning, without even going near the pit.

Jennings Suction Sewage Pumps are furnished in eleven sizes with capacities from 45 to 450 g.p.m. of unscreened sewage. Heads up to 75 ft. Write for Bulletins 113 and 124.

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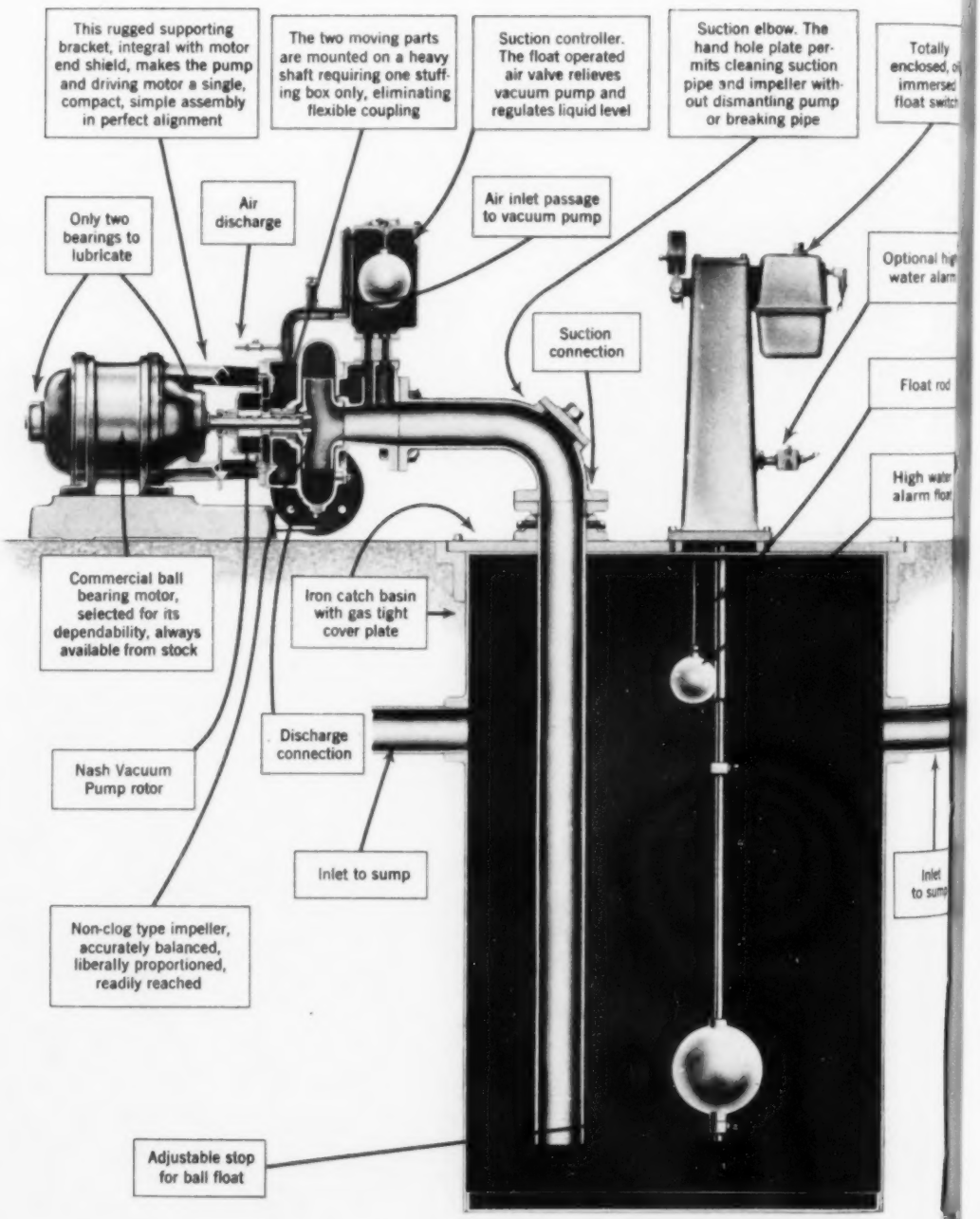
This rugged supporting bracket, integral with motor end shield, makes the pump and driving motor a single, compact, simple assembly in perfect alignment
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Totally enclosed, oil immersed float switch
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Inlet to sump
Inlet to sump
Non-clog type impeller, accurately balanced, liberally proportioned, readily reached
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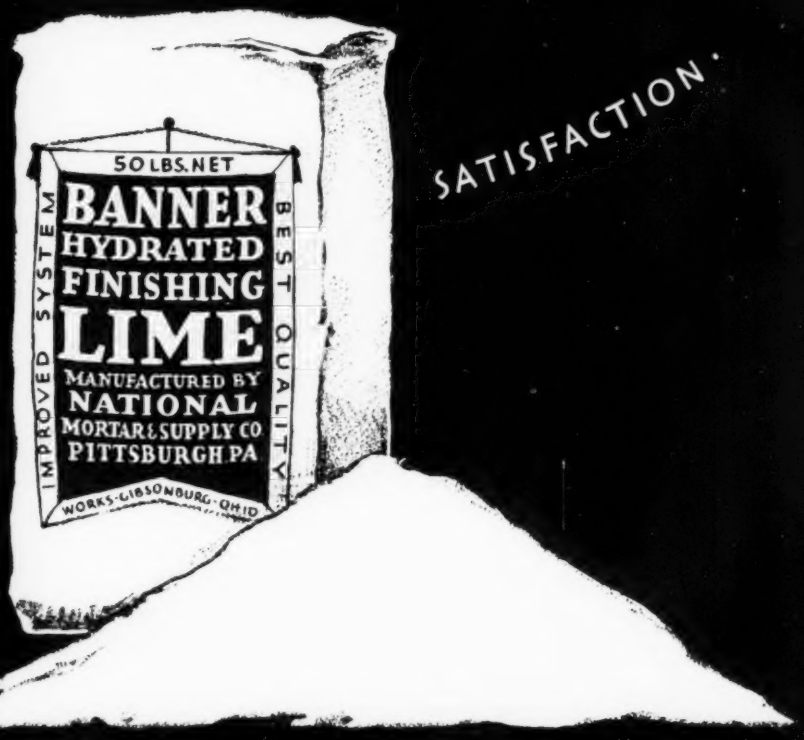
·SACKS·OF·



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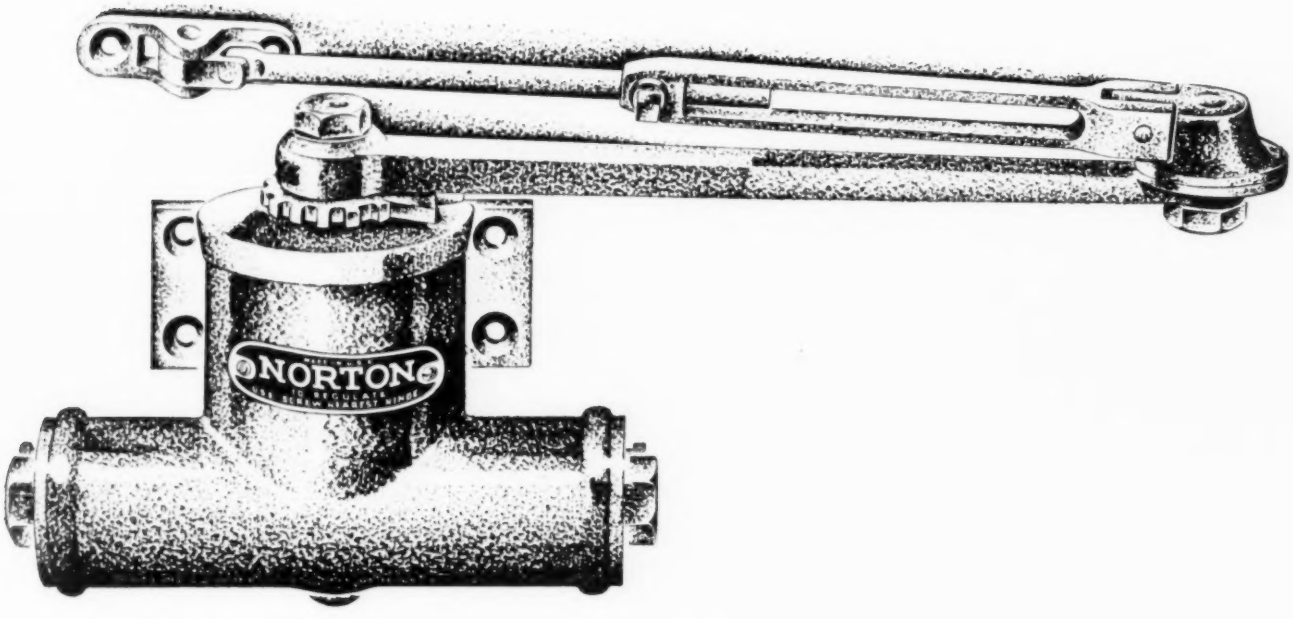

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See Sweet's pages B2408-2412

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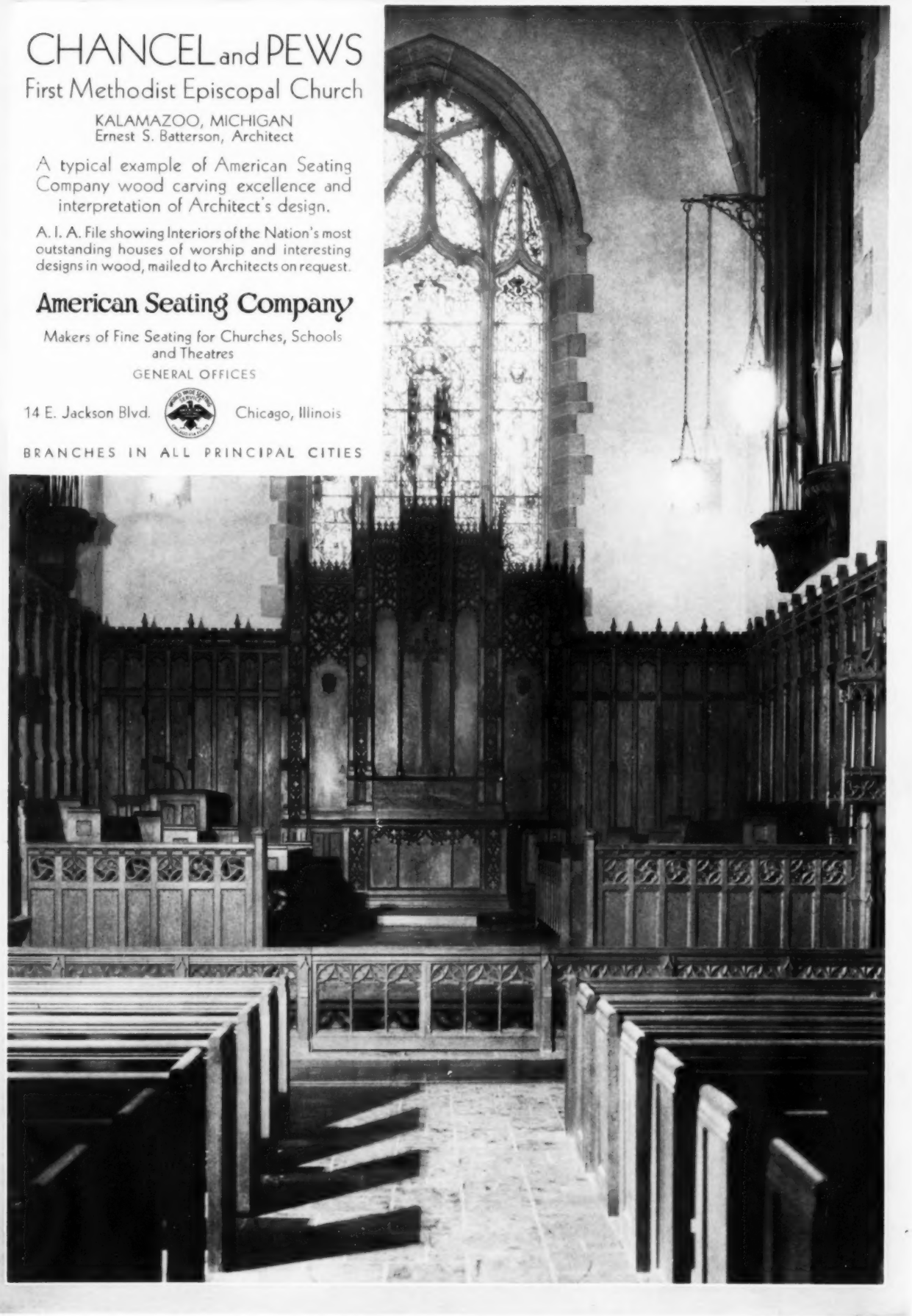

IN SAN JUAN

THIS fine modern building, the Gonsalez Padin Company Building, San Juan, Porto Rico, is glazed with Adamston Glass.

Not only is Adamston Window Glass in demand by careful buyers from Coast to Coast and from the Gulf to Canada, but beyond the borders of the United States, Adamston is recognized as

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Concrete Joist Floor Construction

Sets the Pace Anew

ARCHITECTS and Engineers have exhibited a genuine interest in the new Two-O-One North Wells Building, Chicago. For this building, towering twenty-nine stories high, is primarily a reinforced concrete structure—tallest building of its kind ever attempted.

Significant is the fact that concrete joist floor construction was specified for this important development in reinforced concrete design, and that Meyer Steelforms were the choice of the contractor responsible for speeding this structure through to successful completion.

An interesting feature of the building program was the framing of two floors at one time and the placing of concrete on two floors consecutively—a plan that saved at least a day per floor.

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MEYER Steelforms

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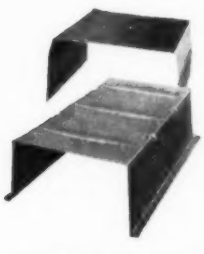

THE ORIGINAL REMOVABLE STEELFORMS FOR CONCRETE JOIST FLOOR CONSTRUCTION

SCOTLAND selects this cream-white cedar for a famous hotel

Internationally famous Gleneagles Hotel, Perthshire, Scotland. Reception rooms, corridors and bedrooms finished with Port Orford Cedar.

The use of Port Orford Cedar as interior trim in many of the world's stately buildings is a tribute to the merits of this fine white cedar.

Among such buildings are the United States National Bank building, Portland, Oregon; the Biltmore Hotel of Los Angeles, for interior trim of all dining rooms and rooms above the second floor; interior trim of the Gleneagles Hotel, Perthshire, Scotland.

One of the Gleneagles reception rooms finished with Port Orford Cedar

The satin-smooth surface of Port Orford Cedar takes enamel readily—holds it for years. No grain shows through. Doesn't crinkle or blister. Needs no unusual priming coat.

Its cream-white color stains readily to true, even, warm tones. Soft and pliable, this wood works easily—never checks, splinters, warps or twists. Holds nails with unusual tenacity. Is free from pitch, knots and rosin.

Light and strong, weather and decay resisting, Port Orford Cedar is preferred for entrances, porch columns, garden furniture; bulkheading, tunneling, decking, boat building. Acid-proof, it is used in over 90% of the world's storage batteries. It does not warp and is extensively used for Venetian Blinds.

Your local lumber dealer and millwork house has Port Orford Cedar lumber and plywood or can obtain all standard grades and sizes promptly.

Send for our booklets!

The coupon will bring you valuable information about the many outstanding uses of this fine wood. Mail today.

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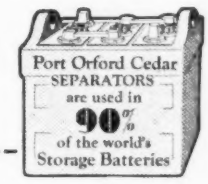

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This Company is the leading manufacturer of Black and Galvanized Sheets, Formed Roofing and Siding Products, Tin and Terne Plates for every known purpose. Sold by leading metal merchants. Our booklet, *Anti-Corrosive Metal*, describing the enduring qualities of KEYSTONE Copper Steel, will interest architects, engineers, contractors, sheet metal workers, and builders.

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1855 SEVENTY-FIFTH ANNIVERSARY · 1930

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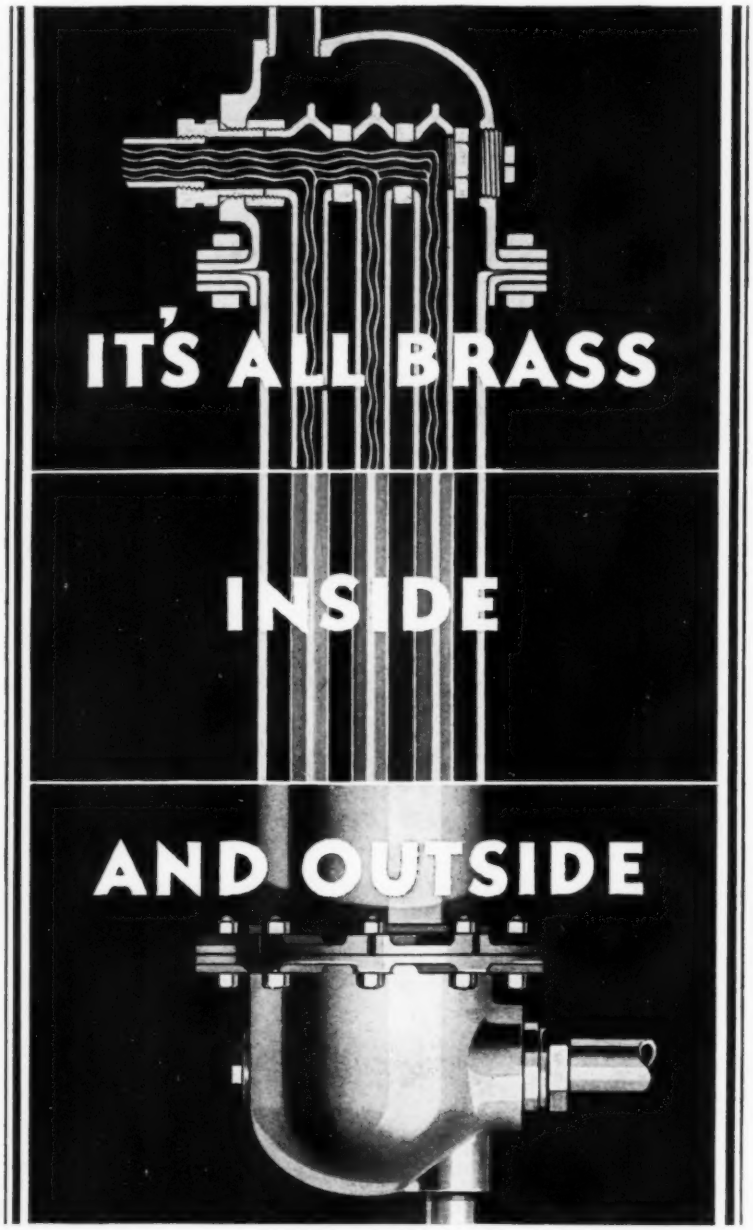
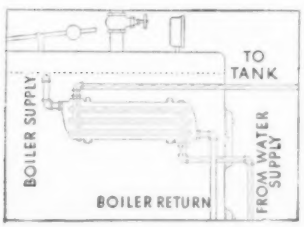
THE AULBRAS — THE NEW IDEA IN HOT WATER HEATING



In other words, IT ENDS FREQUENT SHUTDOWNS!

No need to take "time out" to remove sediment from this heater. It's all brass. Consequently there isn't any sediment — only one of the *many* interesting things about the Aulbras Hot Water Heater. For instance . . .

Waterways are streamlined — offering greatest surface contact and least resistance to passage of heating element. Result: rapid flow of heating element, rapid transference of heat.



It works at any angle, "goes" anywhere. It can be installed either horizontally or vertically — without friction-producing return.

Aulbras heaters are smaller, lighter and better looking than those with the cast iron shell. Reason — more water surface in less space!

The extremely neat brass exterior shell makes a fine appearance — especially in the "up-to-minute" modern residential cellar. Or in *any* ship-shape boiler room, for that matter. Note the compact, sturdy construction of this heater. All parts are made of brass. Waterways are made of brass electrically welded together. Heater heads (reversible) are firmly bolted to casing, making a steam-tight joint.

Capacities range from 120 to 10,000 gallons with 100° temperature rise in three hours.

. . . But there's much more to tell. Write us at the address below.

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There...that's where to put the radiator!

Clinton, Mass., Savings Bank, Hutchins & French, Archts., J. E. Chatman, Engr., Lynch & Woodward, Heating Contrs.

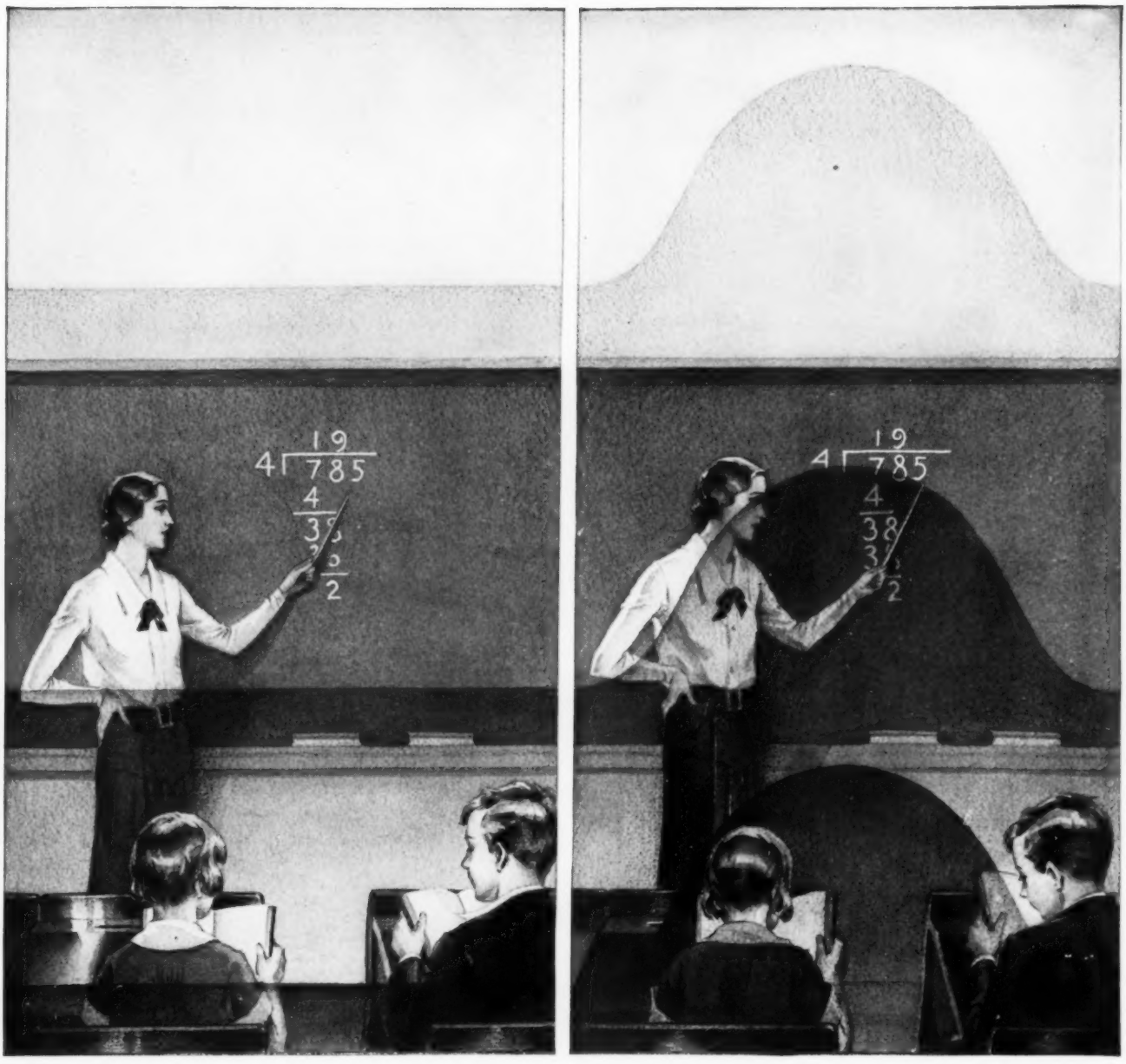
The old question of where to put that radiator almost answers itself—when the radiators are Robras 20-20. They fit in the most convenient place of all—in the wall, out of the way and out of sight.

Instead of destroying the effect of the fine windows in this unique New England savings bank interior, Robras 20-20 Radiators fitted neatly under the sills..."Fitting neatly" into the most inconceivable places, is the history of these radiators in thousands of installations...in the studding of walls...in fact, in *any* space 4 inches or more deep.

You will want to know more about this surprisingly flexible, electrically-welded brass radiator. Why not investigate — through one of our offices, Sweet's catalogue, or your A.I.A. file?

ROBRAS 20-20

ROME BRASS RADIATOR CORPORATION, ONE EAST FORTY-SECOND STREET, NEW YORK, N.Y.



Why some backward pupils are backward

Everyone knows the dangers of eyestrain for young eyes; the headaches, drowsiness and apparent stupidity that can come from improper, *unbalanced* lighting. Scientific illumination charts reveal many interesting facts which point the way to proper lighting. However, Balanced Lighting, is a simple, commonsense choice of the "happy medium" between the extreme characteristics among the many types of lighting units and the proper application of the unit chosen. Let a Graybar Lighting specialist tell you more about Balanced Lighting and help you select units. Note this coupon below.

FOR BALANCED LIGHTING, WEIGH:	
Horizontal Light vs.	Reflected Glare
Vertical Light vs.	Direct Glare
Shadow Depths vs.	Flat Shadows
Maintenance & Design vs.	First Cost

Showing how various factors balance, for best results.

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OFFICES IN 76 PRINCIPAL CITIES. EXECUTIVE OFFICES: GRAYBAR BLDG., NEW YORK, N. Y.

COUPON

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The creative ability and painstaking care of architects is safeguarded when Tree Mark—grade- and trade-marked lumber—is specified.

For All Homes of Wood

Specify Tree Mark—the guaranteed lumber

CAREFULLY you specify the materials which go into a home. Upon the rigid filling of these specifications depends the beauty, the worthiness, the value of the completed structure.

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If you are faced with any lumber problem, let the National Lumber Manufacturers Association help you. Expert in every phase of lumber technology and engineering methods, assistance is offered you free of charge or obligation.

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Send me a free copy of "For Home Lovers" and "Taking the Mystery Out of Lumber Buying."

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TRADE **YALE** MARK

SIX OUT OF EIGHT ARE YALE EQUIPPED

■

THIS original sketch, drawn by Yasuo Matsui, architect, and recently featured in metropolitan newspapers, indicates the comparative height of New York's tallest skyscrapers.

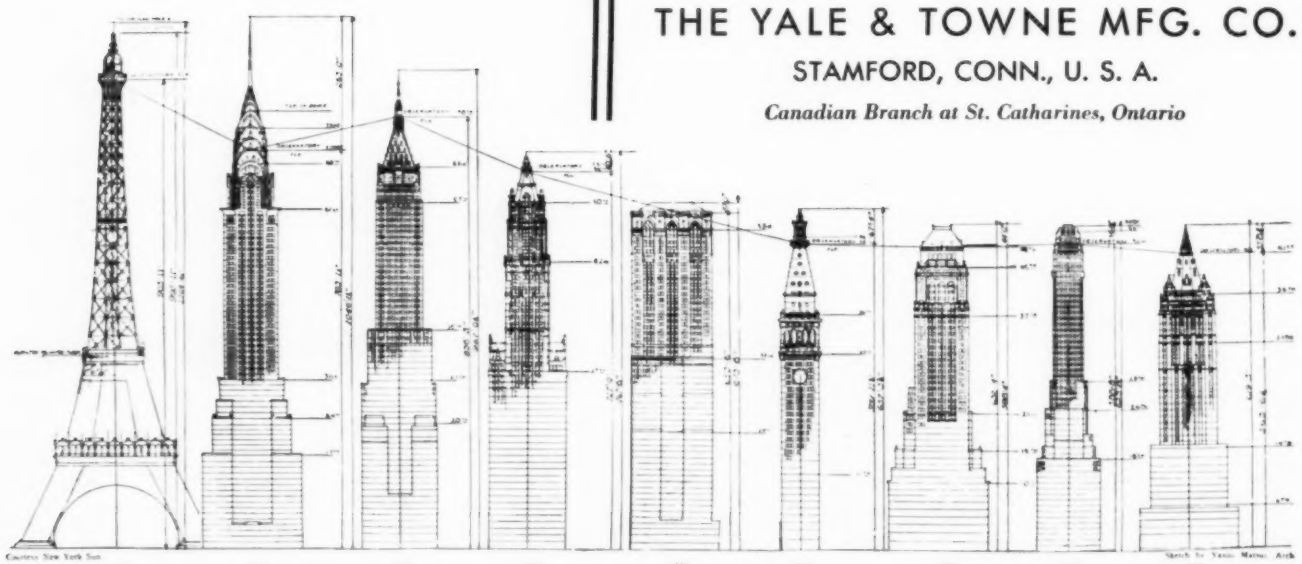
It is interesting to note that of the eight buildings shown, *six* are equipped throughout with Yale locks, Hardware and Door Closers. Yale Standardized Locks eliminate installation details and make possible the interchanging of locks in the same mortise, whenever operation variations may be desired, simplifying the problem of the architect, owner and contractor.

Architects who build for the future specify YALE.

THE YALE & TOWNE MFG. CO.

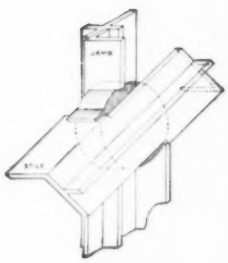
STAMFORD, CONN., U. S. A.

Canadian Branch at St. Catharines, Ontario



1889	1930	1930	1912	1930	1908	1929	1929	1929
EIFFEL TOWER Gustave Eiffel, Architect.	CHRYSLER BLDG. William Van Alen, Architect. Fred T. Ley & Co., Contractor	MANHATTAN BLDG. H. Craig Severance, Architect Yasuo Matsui, Asso. Architect. Starrett Bros., Contractor	WOOLWORTH BLDG. Cass Gilbert, Architect. Thompson-Starrett, Contractor	LINCOLN BLDG. J. E. R. Carpenter and Associates, Architects. Dwight P. Robinson, Contractor	METROPOLITAN LIFE BLDG. H. Le Brun & Sons Architects. V. J. Hedden & Co., Contractor	10 E. 40th ST. BLDG. Ludlow & Peabody Architects Yasuo Matsui, Consulting Arch. G. Rohard Davis, Contractor	CHANIN BLDG. Sloan & Robertson, Architects. Chanin Constr. Co., Contractor	NEW YORK LIFE BLDG. Cass Gilbert, Architect. Starrett Bros., Contractor
	—YALE— HARDWARE	—	—YALE— HARDWARE	—YALE— HARDWARE	—YALE— HARDWARE	—YALE— HARDWARE	—	—YALE— HARDWARE

YALE MARKED IS YALE MADE



A triumph in pivot design

Here is window sash unlike all others† Defies time and corroding elements† Fabricated exclusively by MESKER from genuine wrought iron of special rolled cruciform bar type, it brings new low maintenance costs† Marks the end of "or equal" sash phrasing in sound building practice† Wonderful for packing house, foundry, seaboard or railroad buildings, and for chemical plant use† Learn about it† Request Folder AR†

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MESKER BROS. IRON CO., ST. LOUIS, MO.
Wrought Iron Window Sash Originators

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No. 7711 COMBINATION WARNING LIGHT & RECEPTACLE

Flash the Story of Careful Wiring

To guard against hazards of heating appliances left "ON"

Here, the Architect may point to a SAFETY feature in the wiring of residential jobs. Warning Light shows RED when current is "ON" in Receptacle. Which shows the client you've taken precaution to safeguard the home against over-heating of heating appliances . . . In kitchens, laundries, dining rooms, bedrooms, H & H "No. 7711" warns against negligence with electric flatirons, cookers, toasters, heating pads, curling irons &c. . . . With safety you have STYLE in this new device. Brass plate, or molded brown "HEGEMITE" with ribbed surface and art border. Bullseye FLUSH with plate; no projection. Neatly designed to attract attention to a wiring safeguard which deserves it! Catalogue "U" gives specifications on this and OTHER wiring-advances of interest to the architect. May we send you this book for the newer planning of lighting systems?

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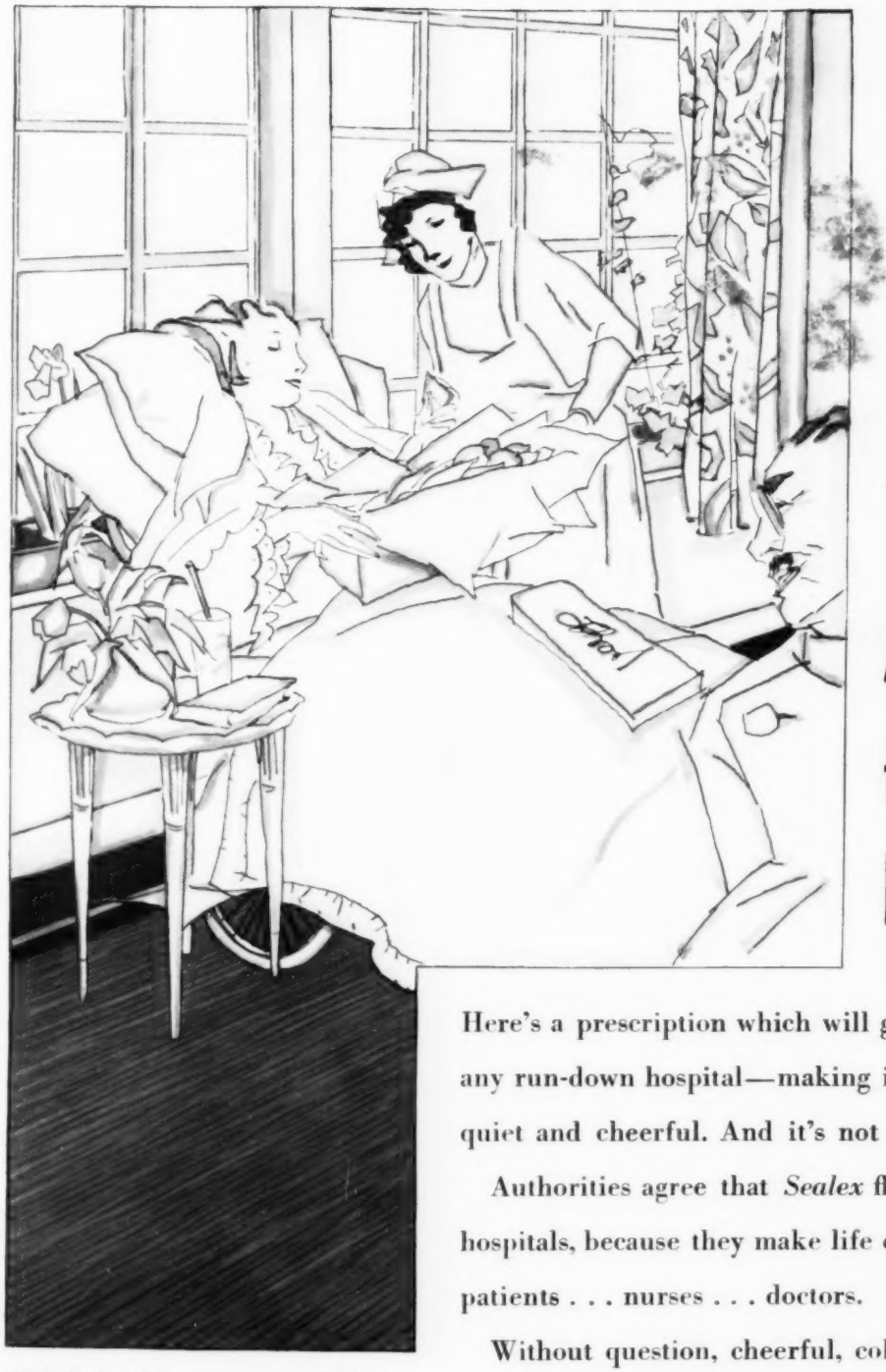
THE ARROW-HART & HEGEMAN ELECTRIC CO.

HARTFORD, CONN. MAKERS OF ELECTRIC SWITCHES SINCE 1890



THIS cheerful sun-room is certainly a far cry from most hospital interiors! But look closely, and you will see that the cheerful effect is created without the slightest sacrifice of modern sanitary requirements. Color—in the washable tinted walls, in the furniture, in the restful floor of *Sealex* Jaspé Linoleum—makes any hospital room more livable and comfortable.

"Good Medicine" for the hospital

Here's a prescription which will go a long way toward "curing" any run-down hospital—making it comfortable, and keeping it quiet and cheerful. And it's not an expensive remedy, either!

Authorities agree that *Sealex* floors are "good medicine" for hospitals, because they make life easier and pleasanter for all—patients . . . nurses . . . doctors.

Without question, cheerful, colorful surroundings do much to shorten the convalescence period. Let us suggest to you that one practical and successful way to apply color to hospital interiors is to install *Sealex* floors.

Sealex materials justify the use of pleasant tones and restful tints *underfoot*, because they are so completely

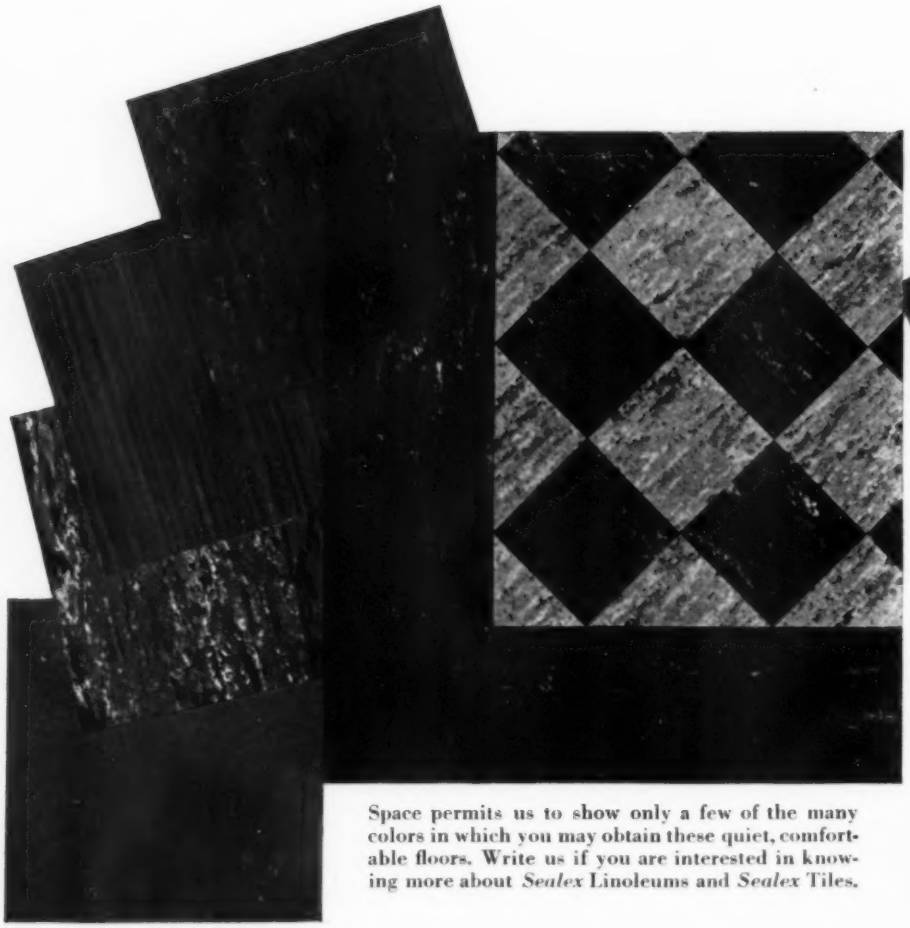
PRESCRIPTION
for the
MODERN HOSPITAL

℞

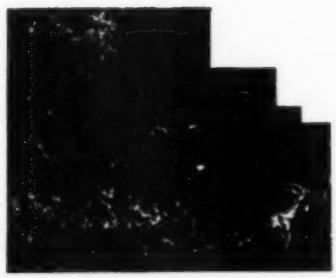
COLOR
QUIET
COMFORT

Apply ingredients to exposed surfaces causing the irritation. Valuable as both a sedative and a restorative.

[*Continued on following page*]



Space permits us to show only a few of the many colors in which you may obtain these quiet, comfortable floors. Write us if you are interested in knowing more about *Sealex* Linoleums and *Sealex* Tiles.



"Good Medicine" for the hospital

[*Continued from preceding page*]

sanitary and easy to clean. Wear will not make *Sealex* floors grimy and spilled things will not spot or stain them.

With *Sealex* materials at hand, we can forget our former inclination to hold to dull, hard and noisy floors for the sake of sanitation, and can apply to floors the modern principle of color-therapy.

Now for *comfort! Sealex* floors make a great change in the peacefulness and restfulness of any hospital. They deaden sound and cushion footsteps. *Sealex* floors muffle the noises which are so trying to patients—but which are unavoidable when hard-surfaced floors are present. And because they are easy underfoot, they conserve the nerves and vitality of the hospital staff.

Sealex floors may be as simple and inexpensive, or as richly decorative, as you desire. *Sealex* materials come in a profusion of colors and patterns. And when our "ready-made" patterns are not exactly what is desired, we will submit designed-to-order floor patterns. Write us for more information about Bonded Floors of *Sealex* materials.

CONGOLEUM-NAIRN INC., GENERAL OFFICE: KEARNY, N. J.

(*See preceding page*)

You'll be interested in this authoritative booklet on hospital floors, prepared by architects. May we send you a copy?

BONDED FLOORS

BONDED FLOORS are floors of *Sealex* Linoleum and *Sealex* Treadlite Tile, backed by a Guaranty Bond. Authorized Contractors for Bonded Floors are located in principal cities.

ARCHITECTURE
by Starrett & Van Vleck

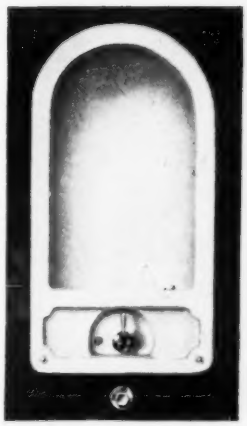
RENDERING *by* Hugh Ferriss

FOUNTAINS *by* Halsey Taylor

Abraham & Strauss Building
Brooklyn

THE New Abraham and Strauss Department Store Building in Brooklyn as it will look when completed is shown above in a rendering by Hugh Ferriss. The architects, Starrett & Van Vleck, ever mindful of the comforts and conveniences such a structure should insure the public, selected only the finest equipment throughout. In this superbly modern, block-long edifice Halsey Taylor Drinking Fountains safeguard the health of shoppers and employees alike, No. 626 recess type, as illustrated, in color, being used.

For schools, hospitals and industrial buildings too, architects everywhere recognize that Halsey Taylor Drinking Fountains meet the time-tested traditions of their profession and that they can specify them with fullest confidence. »The Halsey W. Taylor Company, Warren, Ohio.



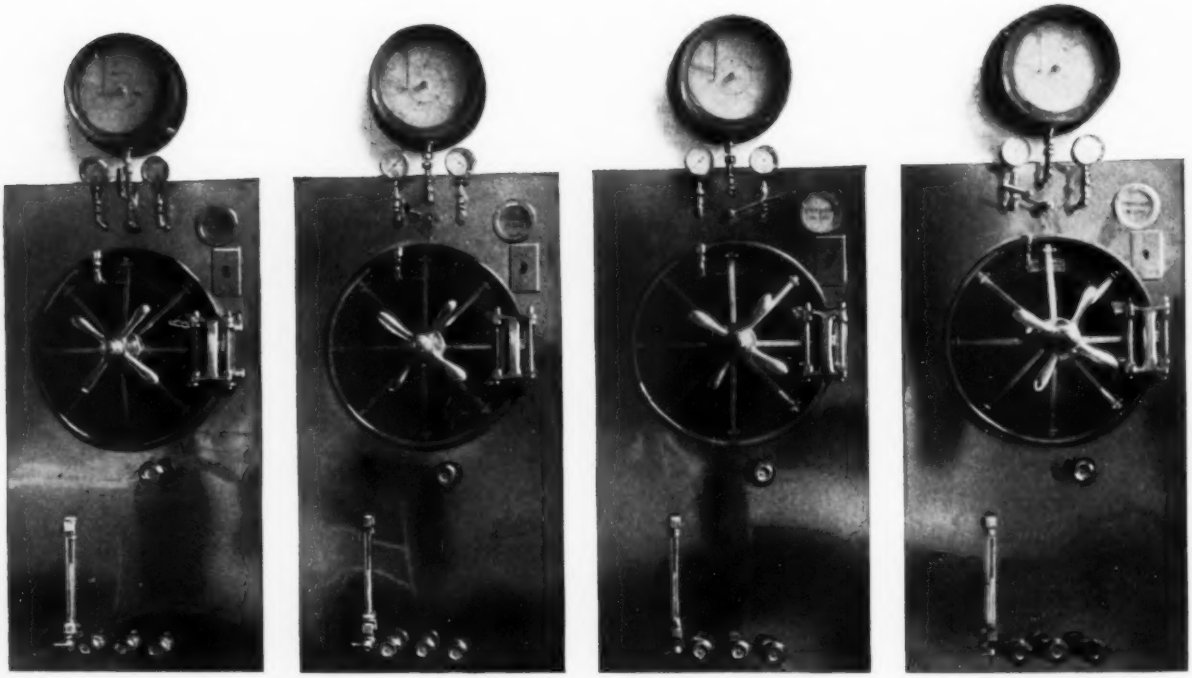
No. 626
An attractive recessed Vitreous China Wall Type Fountain used in the building shown.

See Sweet's Architectural Catalog~ 14 pages

•

HALSEY TAYLOR
Drinking Fountains
THE SPECIFICATION FOR SANITATION

Leading Hospitals favor *Sanitary* *Monel Metal* for clinical service



"Climax" built-in sterilizers with Monel Metal panels, installed in the Beth Israel Hospital, New York, N. Y., by THE HOSPITAL SUPPLY COMPANY and WATTERS LABORATORIES, CONSOLIDATED. Architect: LOUIS ALLEN ABRAMSON, N. Y.

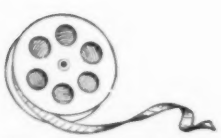
IN planning the modern hospital no factor deserves more careful attention than the selection of clinical equipment—particularly in regard to construction and quality. Here, above all, the question of first cost is subordinate to the principle of lasting efficiency and long-run economy.

For this reason, many of the most important hospitals have standardized on Monel Metal equipment for clinical use. They know that the many advantages which this silvery Nickel alloy has manifested in food and laundry service can be applied with equal success to the professional side of hospital work.

Inherently clean, Monel Metal provides scrupulous sanitation with minimum cleaning labor. Its lustrous, rust-proof surface resists the repeated attacks of cleaning compounds and disinfecting solutions. It has no coating to chip, crack or wear off. It offers the strength and toughness of steel with greater durability.

You can insure your clients' lasting satisfaction by specifying Monel Metal wherever service conditions demand low cost sanitation with enduring strength and beauty.

Send for "Modern Hospital Equipment", an illustrated book on the use of Monel Metal for clinical, food service and laundry equipment.



The story of Monel Metal —its properties and uses— is told in a fascinating 2-reel motion picture film now available for free distribution. Write for details.

MONEL METAL

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Monel Metal is a technically controlled Nickel-copper alloy of high Nickel content. It is mined, smelted, refined, rolled and marketed solely by The International Nickel Company. The name "Monel Metal" is a registered trade mark.

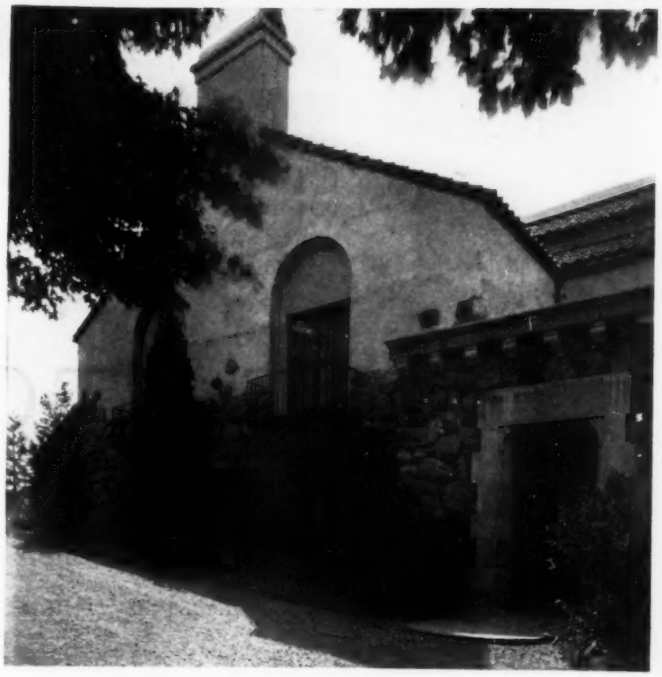
THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL STREET, NEW YORK, N. Y.

Interior Tennis Court of E. B. Schley, Far Hills, N. J.

"Metal Fittings by FISKE"

THE interior and exterior metal work on the enclosed tennis court of E. B. Schley at Far Hills, N. J., is another notable FISKE installation.

"Metal Fittings by FISKE" has become a familiar phrase among architects whose specifications always call for the *finest* in materials and workmanship. For they realize that by specifying FISKE they command the resources of an organization with over 70 years experience in this highly specialized work.



Exterior View of Tennis Court. Hyde & Shepherd, Archts.

FISKE "craftsmen in metal" are prepared to carry through from pencil to metal every detail of original plans working in close cooperation with architect and builder. Write for illustrated catalogue of ornamental metal work.

J.W.Fiske IRON WORKS
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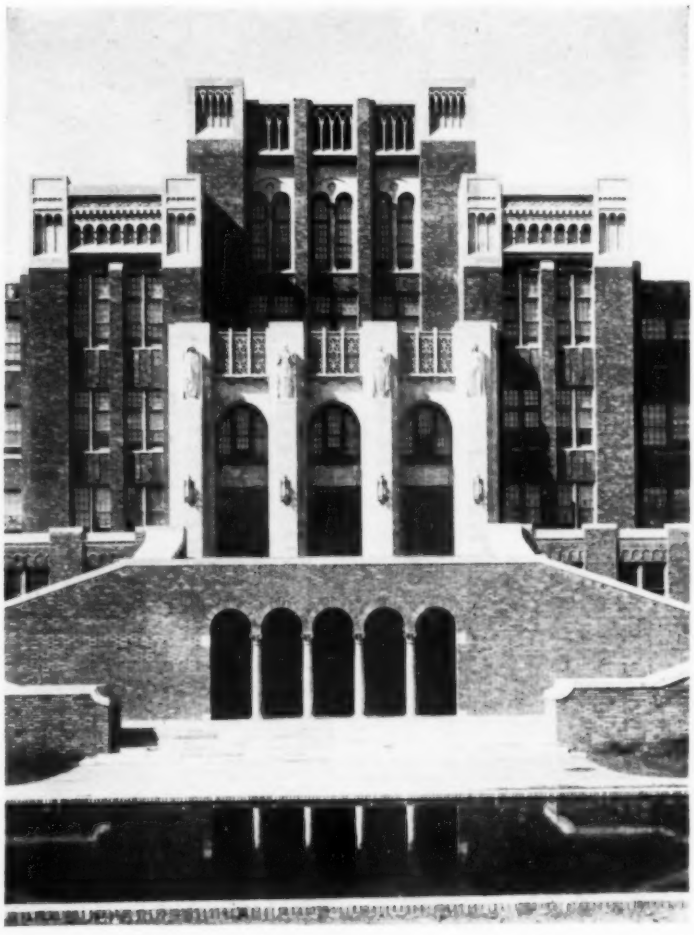
ESTABLISHED 1858

SPECIALISTS IN ORNAMENTAL METAL WORK



HIGH SCHOOL BUILDING, LITTLE ROCK, ARKANSAS. MANN & STERN, *Architects;* JOHN P. ALMAND AND WITTENBERG & DELONY, *Associate Architects.*

CAST STONE TRIM

CAST STONE—because it can be harmonized with other materials—finds one of its greatest fields of usefulness as trim. Its adaptability to this use is based on its decorative possibilities and on the wide range of color which it provides. The color of cast stone is derived either from naturally colored aggregrate or from pure mineral oxides incorporated in the concrete. It is permanent and unchanging. Architects are utilizing cast stone more and more as a medium of color. They are urged to take still further advantage of the possibilities which it offers. Through the use of the standard specification as prepared by this Institute, a product of high quality is assured.

Cast stone is a building stone molded from concrete in which the aggregate is especially prepared and selected for durability and appearance. The surface is cut or otherwise treated to produce any desired finish.

THE CAST STONE INSTITUTE

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Von Duprin

Self-Releasing Fire and Panic Exit Latches

The Advantage of the Separate Specification

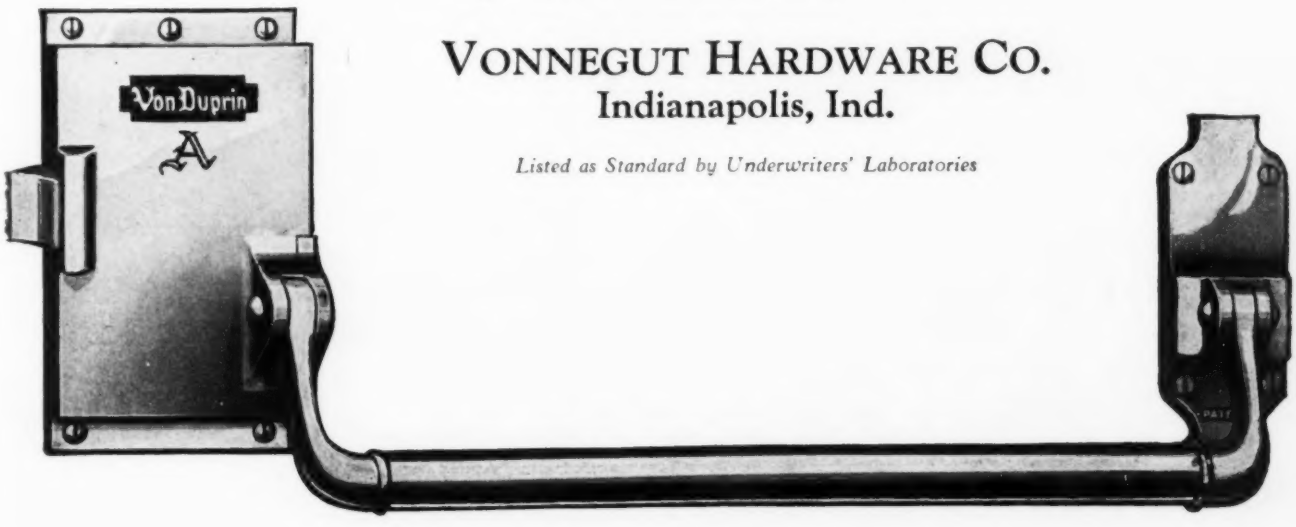
There are two ways in which panic bolts are commonly specified. Some architects include them with the finishing hardware; others make them a separate item of the specifications.

The latter method has the very definite advantage of helping the building owner get what is specified. The former always tempts the occasional unscrupulous dealer to substitute cheaper devices as part of the finishing hardware contract.

Sweets
Pages C3130-C3135

It is to prevent this that we protect all hardware dealers by selling every reputable dealer at the same fair prices.

As a further means of insuring the delivery of the genuine, we urge that you specify panic devices separately from the finishing hardware—and, of course, by name.



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Indianapolis, Ind.

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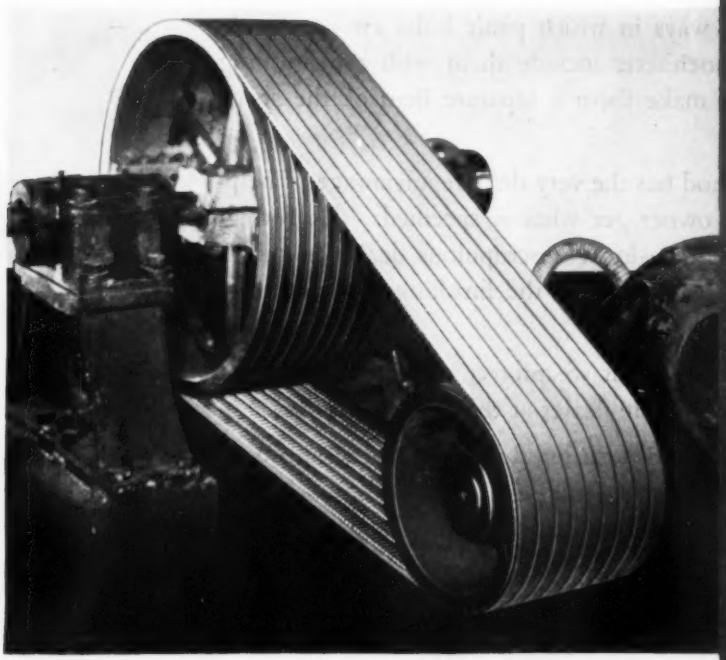
Install
DAYTON COG-BELT DRIVES

...they are quiet
...clean
...last longer



Dayton Cog-Belt Drives meet in a new and effective way the demand for quieter, cleaner and sturdier power transmission—for drives with longer life. Their construction is revolutionary. The fabric of the belts is pre-stretched, reinforced—strengthened. Less adjustment is necessary. They are die-cut . . . not moulded. They grip the pulley grooves more firmly. And they work with less tension. Therefore, there's less wear on bearings. Moreover, Daytons resist the deteriorating effects of heat, oil and water. This means far longer life and at the same time lower costs for maintenance.

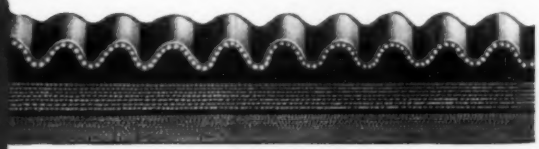
Not only do Dayton Cog-Belt Drives last longer, but they run without vibration . . . quietly. Furthermore, no lubrication is necessary—no oil or grease to collect dust and dirt. And, because the belts are more firmly seated in the pulley grooves, they are more efficient. You can maintain smooth-running and uniform operation at all times.

Let us show you *all* the details of Dayton construction. Send for a sample section of a Dayton Cog-Belt and for the new Cog-Belt Catalog. Mail the coupon today.

THE DAYTON RUBBER MFG. CO.
DAYTON, OHIO

Factory Distributors in Principal Cities and all Westinghouse Electric and Manufacturing Company Sales Offices

Dayton
COG-BELT DRIVES



THE DAYTON RUBBER MFG. CO.,
Dayton, Ohio.

Gentlemen: Send me a sample of the Dayton Cog-Belt and a Dayton Cog-Belt Catalog. 0-6

Name.....

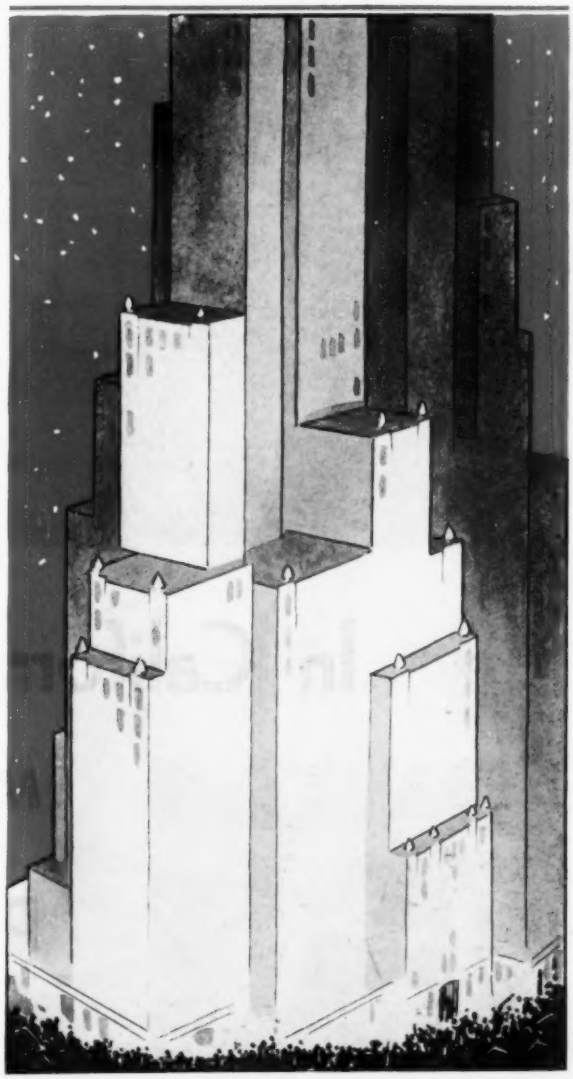
Position.....

Firm Name.....

AR-6-30

Firm Address.....

UNSEEN *after the* BUILDING *is* FINISHED



but can they be FORGOTTEN?

PIPES are the arteries of every building—upon them rests a vitally important responsibility. Locked up between walls of brick, steel and plaster, every length of pipe must be perfect—a single leak may cause not only great expense but reflect seriously on the judgment of the Architect and Contractor who specified it.

No one knows more thoroughly the great importance of good plumbing pipe than the manufacturers of "Spang" Steel Pipe. No pipe is more carefully made and more rigidly inspected—a policy of quality manufacture that has established "Spang" in the abiding confidence of the leading Architects and Building Contractors throughout industry.

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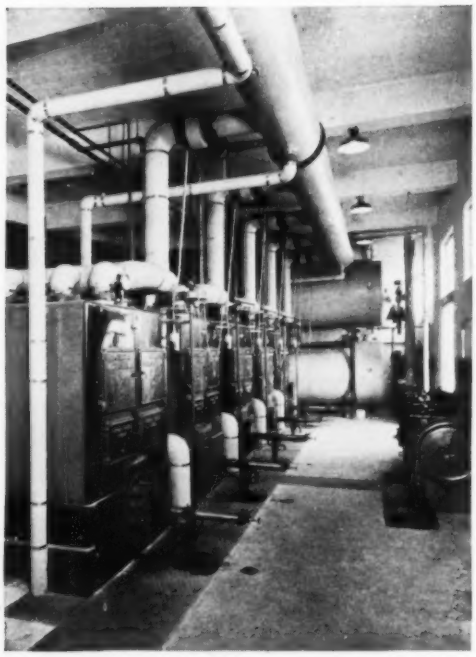
SPANG
WELDED STEEL PIPE

• In California's newest school



MODERN WARMTH protects the pupils

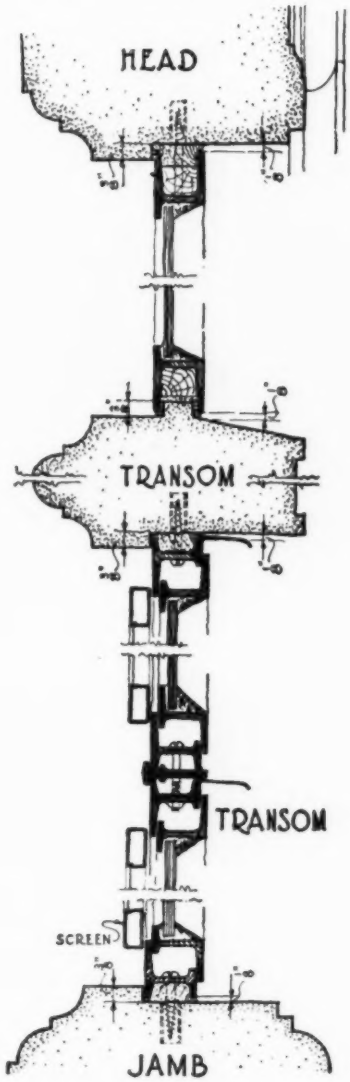
The new East Oakland High School is a fine example of the thorough planning and construction that goes into most public buildings today.

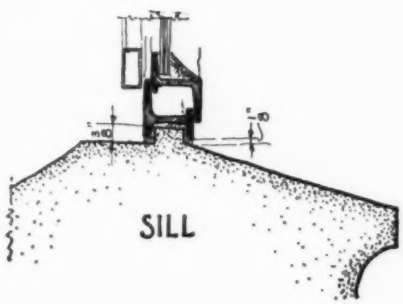
Naturally when it came to heating equipment only the most efficient plant could be considered. That is why a battery of five Ideal Redflash Boilers was installed—one of the largest low pressure heating installations on the Pacific Coast.

AMERICAN RADIATOR COMPANY

40 WEST 40th STREET, NEW YORK, N. Y.

BEAUTY, GRACE, RESTRAINT





"Fencraft"—a steel casement of superior quality in design, materials and workmanship—gives the architect a wide latitude in the designing of window openings—a choice of many sizes—a choice of hardware, solid bronze or nickel silver—a choice of windows with or without bronze screens.

The heavy construction favors glazing in leaded or plate glass where desired. Heavy, sherardized hinges fitted with 100% bronze bearings.

A new catalogue giving complete "Fencraft" details is now ready.

Fenestra

FENCRAFT CASEMENTS

(Screened)

DETROIT STEEL PRODUCTS COMPANY

2285 EAST GRAND BOULEVARD, DETROIT, MICHIGAN

The Modernistic Movement—Plate 1

THIS interior of the Oklahoma Natural Gas Building at Tulsa, Okla., represents the modern trend in architecture. It was designed by A. M. Atkinson of Tulsa. The marble is Rose Tavernelle, with Belgian Black base and deal plates. It was finished in our Dallas shops and installed by their workmen.

VERMONT MARBLE COMPANY—PROCTOR, VERMONT

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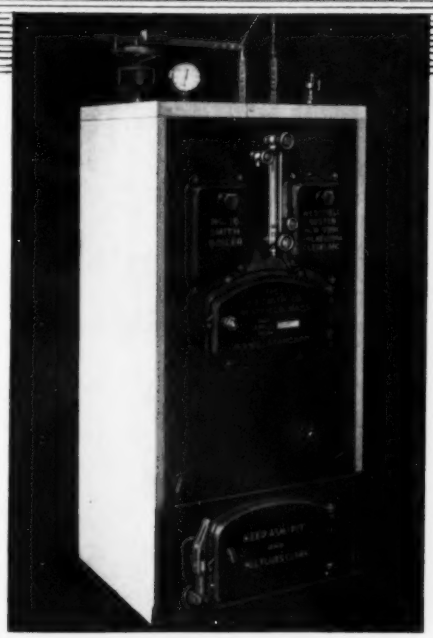
See Sweet's Architectural Catalogues for Specifications and Other Data

VERMONT MARBLE

An Advertisement of APPRECIATION to ARCHITECTS



The H. B. Smith Company deeply appreciates the cooperation it receives from Architects. A compilation of all the specifications you have made in the past half century for H. B. Smith Boilers would make an impressive volume.

You are familiar with the success of the larger sizes (Mills "24", "34", and "44")—Do you know about the New Smith "16", our new sectional for small-to-medium homes? It is the heir of all the best features of our larger boilers. It stresses Fire Surface, the feature on which a boiler's efficiency chiefly depends.

The New Smith "16" has more Fire Surface than any other boiler made of the same grate area, and twice as much as some of them. It operates with equal success whether the fuel is oil, gas, coal or coke.

For complete information write for a free copy of our booklet, "The Smith 16". Address: The H. B. Smith Co., Dept. E-50, Westfield, Mass.

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- **Abundant Fuel Space**
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The **H·B·SMITH**
BOILERS & RADIATORS
Used in fine homes and buildings since 1860

The H. B. Smith Boilers for steam, hot water and vapor heating; radiators; and hot water supply boilers; for every type and size of private home, office building, factory and public building.

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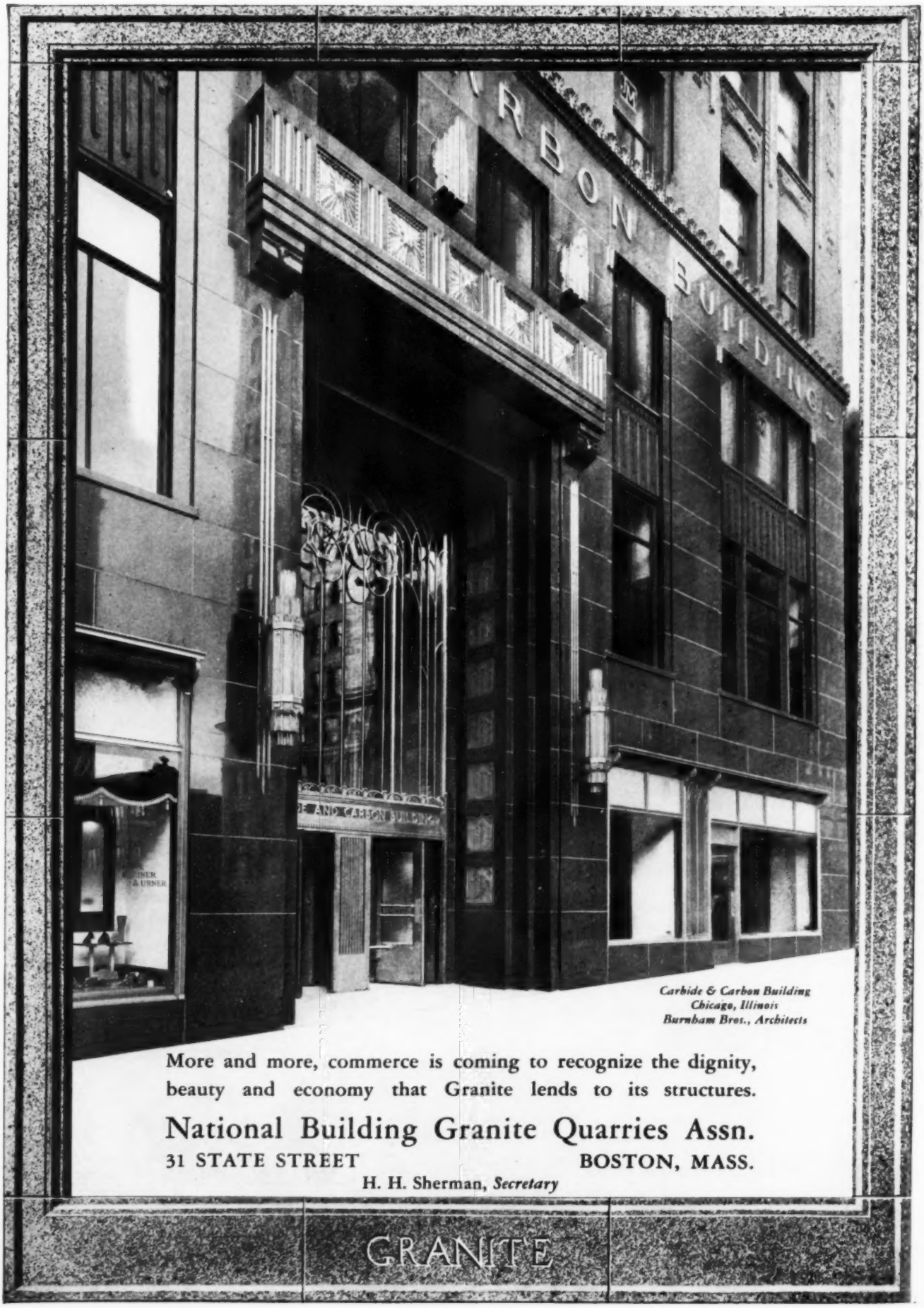
WESTFIELD, MASS.



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Burnham Bros., Architects

More and more, commerce is coming to recognize the dignity, beauty and economy that Granite lends to its structures.

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GRANITE

Associated Business Papers, Inc., 1929 awards for editorial excellence

THE ARCHITECTURAL RECORD WINS FIRST PRIZE

In the class devoted to "Best Article, Series of Articles, or News Report" (in which there were 85 contestants), first prize has been awarded to Robert L. Davison, of the editorial staff of The Architectural Record, for the series of articles appearing in The Record under the general heading, "Technical News and Research."

(See full announcement on page 87)

Naturally THE ARCHITECTURAL RECORD is proud to be able to join in the congratulations due Mr. Robert L. Davison of its staff for winning the first prize, awarded by the Associated Business Papers, Inc., for the "Technical News and Research" series running in THE RECORD throughout 1929. (The announcement will be found on page 87).

What does "Technical News and Research" do?

It is an innovation in publishing which:

1. Presents, *every month*, a study of the best standard practice in one aspect of building.
2. Approaches the entire study always from the standpoint of *design*.
3. Concentrates on one central problem handled by the staff with the assistance of outside experts, instead of assigning the experts individual "subjects" however closely related. It therefore presents a single statement instead of several overlapping or conflicting ones.
4. Accepts editorial responsibility for its recommendations; does not content itself with publishing private views.
5. Gives what the staff member in charge of the study considers to be approved practice; where there is doubt, attempts to present the several possible solutions in orderly, succinct fashion.
6. Is in no way borne down by what already has been done by any single individual or group. Particularly in the field of construction methods, Technical News has often taken a position of positive leadership.

Technical News for June:

THE GASOLINE FILLING AND SERVICE STATION

BY K. LÖNBERG-HOLM

The series continues in 1930 with as much as we can give it of the same "timeliness, accuracy, thoroughness, originality, clearness of expression, and usefulness," upon which the prize was based. For the present issue Mr. K. Lönberg-Holm has analyzed the Gasoline Filling and Service Station. If this type of building has generally been turned over entirely to the engineer or to a construction department, perhaps this has been because the operators have held a mistaken view of the architect's work.

They have not generally trusted the architect to do more than to "style" the more "fancy" stations. But equipped with thorough knowledge of the problem the architect can do far more than surface "styling": *he alone* is able to combine in his design a thorough functional efficiency with observance of *community* rights and interests.

THIS STATION is one of a chain reaching from the Mexican border to Canada. It is expected by the promoters that each station in the chain will become the nucleus of a future town, as the inn and the blacksmith shop did in the past. Is not an architect needed in cases like this to make the design respect the community's rights?

THE JULY ARCHITECTURAL RECORD WILL INCLUDE:

Making Buildings Rainproof

One of the most important problems facing the architect today is how to insure rain-tight masonry walls. Mr. Stanley Newman, a specialist in this subject, analyses the causes of leaks in brickwalls and parapets, and offers several recommendations which affect specifications and erection methods. The Turner Construction Company and The Research Department of the Mellon Institute of Pittsburgh give supplementary data.

Vacation Houses on the Pueblo Rivera

Several houses of standard type and good concrete construction built to compete with the ordinary "cheap" houses. Rudolph Schindler, Architect.

Details of Brick Parapets

How to detail brick parapets so as to prevent leakage is demonstrated by detail drawings representing approved practice.

Theatre Construction, Heating, Ventilating, and Acoustics

Supplementing technical study of the theatre that appeared in the May issue is the new research on construction, heating, ventilating, acoustics and auditorium lighting. The two studies together will present the latest and most complete architectural study of the present-day theatre yet available in this country.

Associated Business Papers, Inc., 1929 awards for editorial excellence

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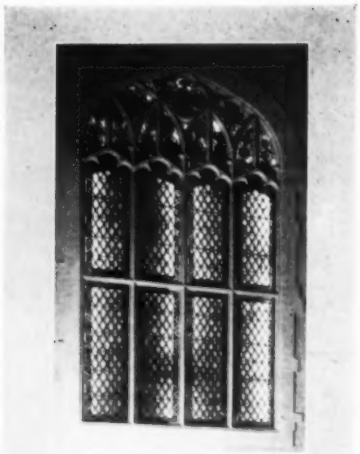
The outstanding qualities which won FIRST PRIZE are indicated in the conditions governing the contest, which state "the Jury will be guided broadly by the timeliness, accuracy, thoroughness, originality, clearness of expression and usefulness as displayed by the particular article or series of articles, etc."

The Technical News and Research section of The Record, inaugurated with the January, 1929, issue, is a new departure in publishing—a creative service designed to meet a pressing need of the architectural profession. It consists of monthly analytical studies, in exhaustive detail, of building problems in relation to specific types of construction; each study verifies and correlates a mass of practical information, elsewhere virtually unobtainable but of a kind urgently needed by the architect for his daily work—although he cannot spare time for the protracted research necessary to assemble it. The studies provide manufacturers with a new avenue of contact with architects, suggest new uses for materials, and simplify the problems of production and marketing by indicating where architects employ products to the best advantage.

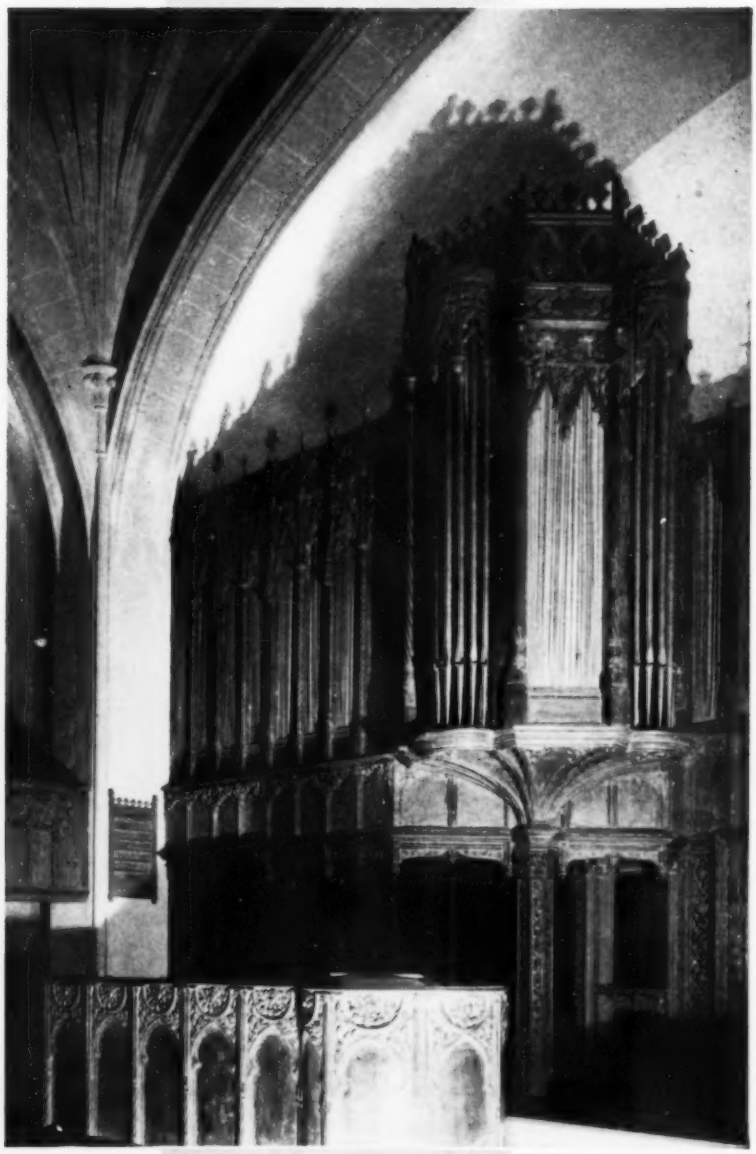
The ARCHITECTURAL RECORD

A Dodge publication — 119 West Fortieth Street, New York, N.Y.

Member A.B.C. and A.B.P., Inc.



Authentic PLASTER ORNAMENT



TILLION & TILLION *Architects*

Effective use of Woodkast in Manhattan Towers *Chancel*

THE architects of Manhattan Towers, the new twenty-three story church and apartment hotel in New York, were confronted with a problem of materials in the design of the chancel. A rich effect of English Gothic wood carving was the one they sought to obtain. Natural wood could not be used because of its excessive cost, so a composition was sought which would be both dignified and durable.

The choice of Jacobson's Woodkast was a fortunate one. With this medium, the rich effect of a profusion of English Gothic carving was obtained at not too great expense and with the minimum of fire risk.

Woodkast is a composition material developed after years of experiment to simulate either old or new wood, in any open grain. In our latest catalogue are pictured a number of designs in which Woodkast is available, many of them reproduced from authentic examples of fine old wood carving. In case none of these are suitable for a particular job, new models can be made at a nominal charge.

JACOBSON & COMPANY
239-41 East 44th Street
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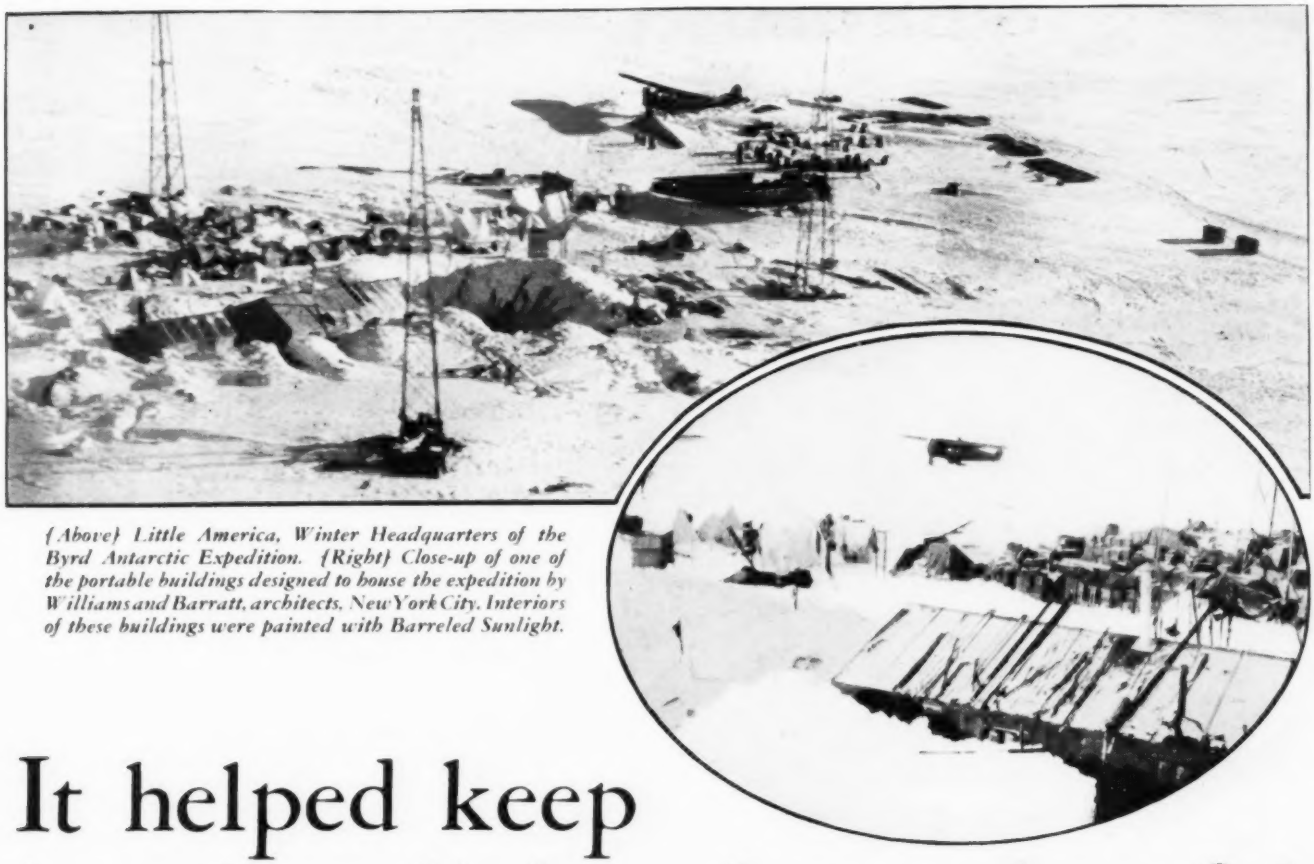
Chosen by the Byrd Antarctic Expedition . . .



(Above) Little America, Winter Headquarters of the Byrd Antarctic Expedition. (Right) Close-up of one of the portable buildings designed to house the expedition by Williams and Barratt, architects, New York City. Interiors of these buildings were painted with Barreled Sunlight.

It helped keep interiors light, clean, cheerful

Easily Tinted

Any desired shade is obtained by simply mixing ordinary colors in oil with Barreled Sunlight white, or by using the handy tubes of Barreled Sunlight Tinting Colors, now available in two sizes. Quantities of five gallons or over are tinted to order at the factory without extra charge.

LOOK closely at the photographs above. Picture the life in these small frame dwellings through the months in which they housed the members of the Byrd Antarctic Expedition.

Numbers of men closely confined through many weeks, coming and going through active days, sleeping at night in eiderdown bags, with sub-zero temperatures outside, and snow whirling through doorways opened for ventilation.

Hard on paint, such conditions! But month after month, Barreled Sunlight on walls and ceilings helped keep interiors bright and cheerful, lastingly clean, high in light-reflecting value.

For a booklet describing in detail the qualities that enabled Barreled Sunlight so successfully to serve the Byrd Antarctic Expedition, mail the coupon.

U. S. Gutta Percha Paint Co., Providence, R. I. Branches or distributors in all principal cities. (For Pacific Coast, W. P. Fuller & Co.)

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Gloss ☐ Semi-Gloss ☐ Flat ☐

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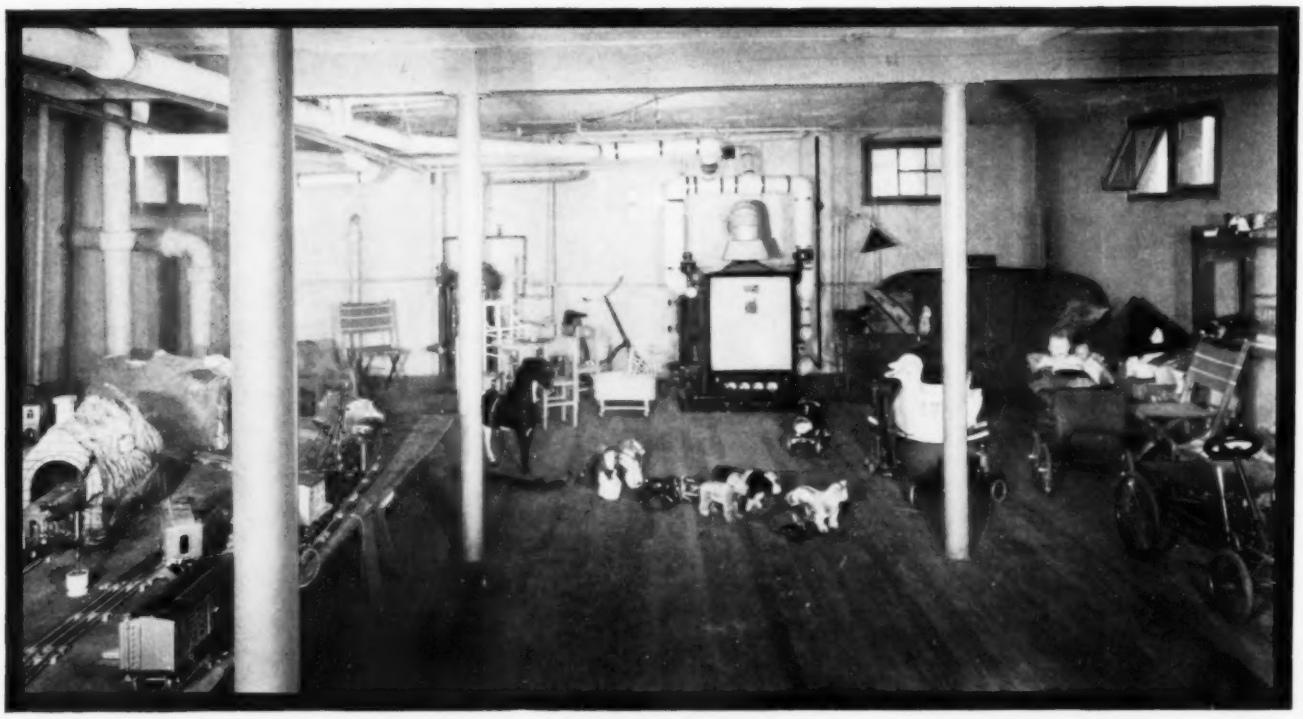
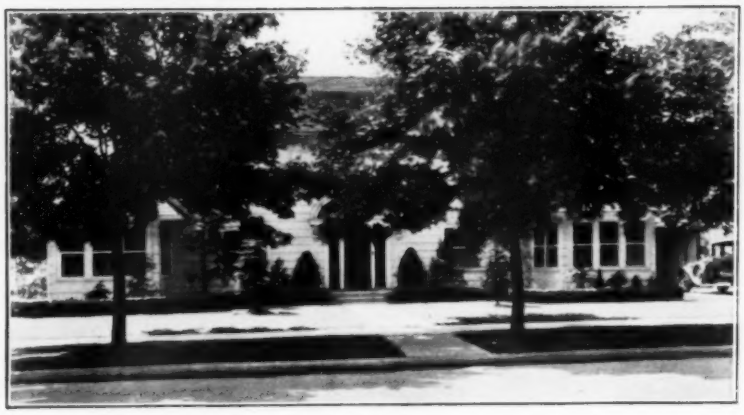
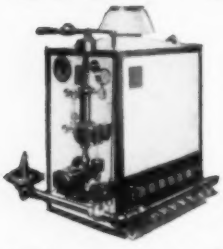
EVERY HOME OWNER WANTS
a Basement like this



Modernized basement of beautiful home on Bedford Avenue, Brooklyn



IDEAL
GAS BOILERS



WHEN an Ideal Gas Boiler was installed in the basement shown above it gave the owner an extra room ideally suited for a play-room for his children.

Ideal Gas Boilers burn noiselessly, cleanly, efficiently, and automatically — and they require no fuel storage or handling and no ash removal.

That is why every home owner can instantly see its advantages. It helps to make any home truly modern.

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AMERICAN RADIATOR COMPANY

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AMERICAN GAS PRODUCTS CORPORATION
Chrysler Building, New York

An interesting group of San Francisco's newest buildings —all Corbin equipped.

•

(photo at top left)
WILLIAM TAYLOR HOTEL
Architects: Lewis P. Hobart
Builders: Cahill Bros.

•

(second from top)
450 SUTTER STREET BLDG.
Architects: Miller & Pflueger
Builders: Lindgren & Swinerton, Inc.

•

(lower left)
THE SHELL BUILDING
Architects: Geo. W. Kelham
Builders: P. J. Walker Co.

•

(lower right)
SIR FRANCIS DRAKE HOTEL
Architects: Weeks & Day
Builders: Lindgren & Swinerton, Inc.

GOOD BUILDINGS DESERVE GOOD HARDWARE

Poor hardware often causes complaints which unfairly reflect upon your judgment. ✓ ✓ ✓ Good Hardware—Corbin—protects you from this possibility.

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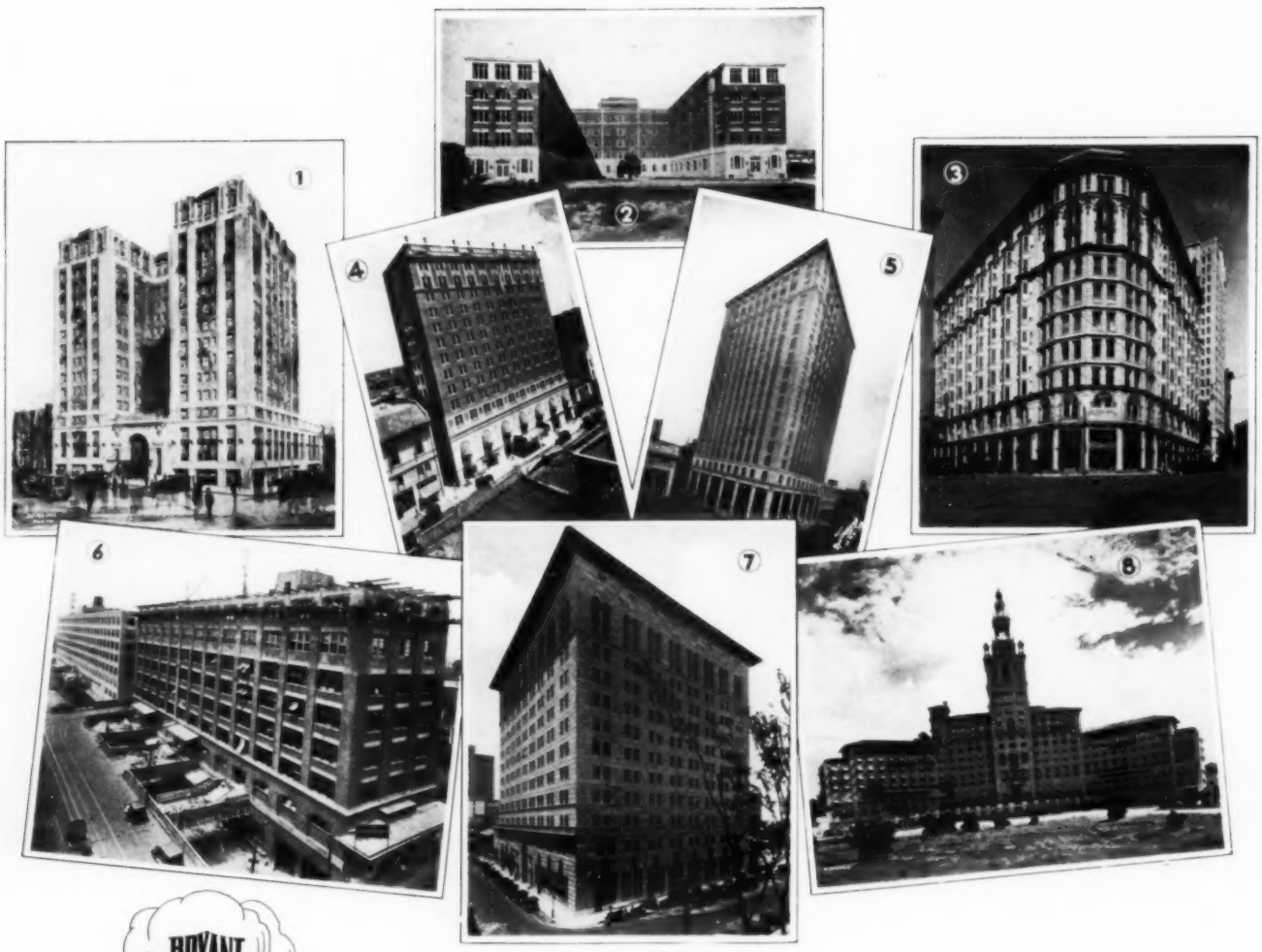
Pacific Telephone & Telegraph Building
Hunter Dulin Building
Merchants Exchange
Commercial Union Building
Financial Center Building
Flood Building
Phelan Building
City Hall
State Hall
Fairmount Hotel
Cathedral Apartments
Huntington Apartments



BRYANT

Eight Important Bryant Installations in the South

1. The John Marshall Hotel, Richmond, Va.
   Architect, Marcellus E. Wright, Richmond
   General Contractor, Wise Granite Construction Co., Richmond
   Electrical Contractor, Chenning & Wilmer, Inc. Richmond
2. St. Vincent Hospital, Jacksonville, Fla.
   Architect, Gerald A. Barry, Chicago
   Electrical Contractor, L. L. Patterson, Jacksonville
3. Piedmont Hotel, Atlanta, Ga.
   Architects, Pringle & Smith, Atlanta
   Electrical Engineer, H. J. C. Pearson, Atlanta
   Electrical Contractor, Sam Donelson, Atlanta
4. Carling Hotel, Jacksonville, Fla.
   Architects, Thompson, Holmes & Converse, New York
   Electrical Contractor, Sam Donelson, Atlanta
5. Lynch Building, Jacksonville, Fla.
   Architects, Pringle & Smith, Atlanta
   Electrical Engineer, H. J. C. Pearson, Atlanta
   Electrical Contractor, H. P. Foley, Washington, D. C.
6. Southern Railway Office Building, Atlanta, Ga.
   Architects, United Engineers and Constructors, Inc., New York and Philadelphia
   Electrical Contractor, Sam Donelson, Atlanta
7. Ingraham Building, Miami, Fla.
   Architects, Schultze & Weaver, New York
   Electrical Contractors, J. L. Goodrich Co., New York
8. Miami Biltmore Hotel, Miami, Fla.
   Architects, Schultze & Weaver, New York
   Electrical Contractors, J. L. Goodrich Co., New York

From the Potomac *to the* Everglades—

MAKE the trip in your car . . . over perfect roads. You'll note in every town and every city a remarkable development. New homes . . . schools . . . factories . . . hospitals . . . hotels . . . business buildings. Of course, a great many of these are "Bryant Equipped," for, like the Southern Railway, whose new office building is included in the group of some recent installations shown above. Bryant also "Serves the South."

See our Catalogue in the new 4-volume Sweet's for 1930, Vol. D, pages 5188 to 5192

THE BRYANT ELECTRIC COMPANY

BRIDGEPORT, CONNECTICUT

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MANUFACTURERS OF SUPERIOR WIRING DEVICES SINCE 1888

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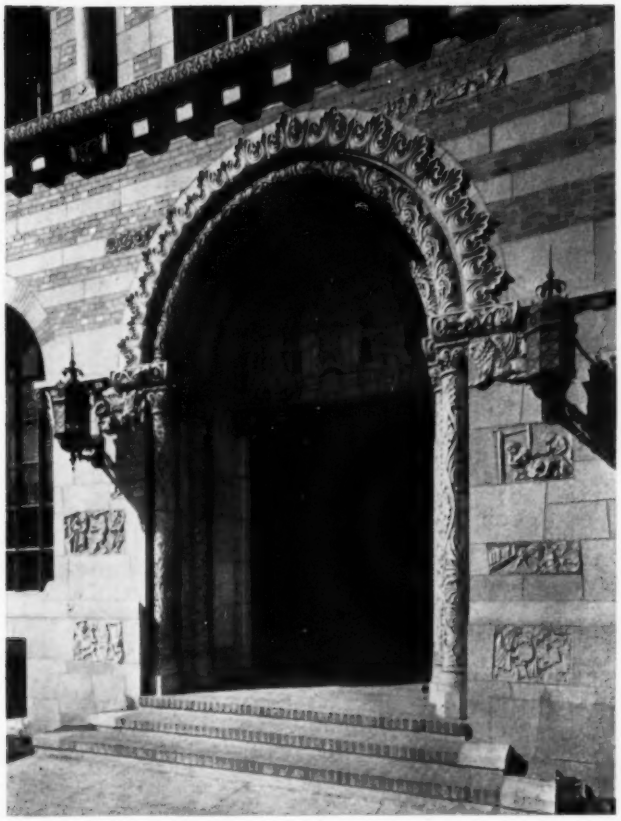

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materials.

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John and Donald B. Parkinson, *Archts.*

Railway Safety—

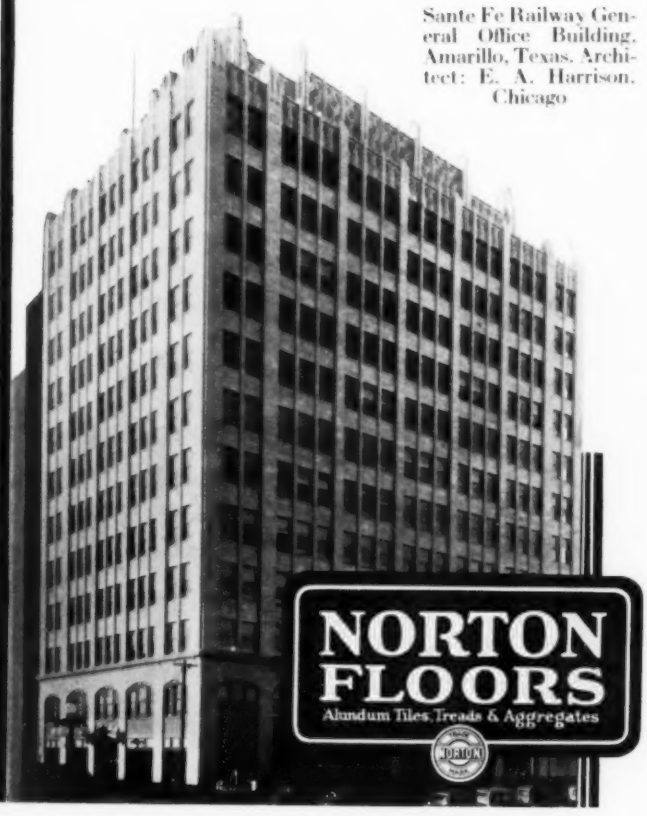
Entrances, Elevator Landings, Stairways of Alundum Tile

ABOUT five years ago nosings of Alundum Tile were used on stairways in the Santa Fe office building at Topeka, Kansas. Now in the railroad's new general office building at Amarillo, Texas, the use of this permanently non-slip tile has been extended to include entrance vestibules, all elevator landings and all stair treads and platforms.

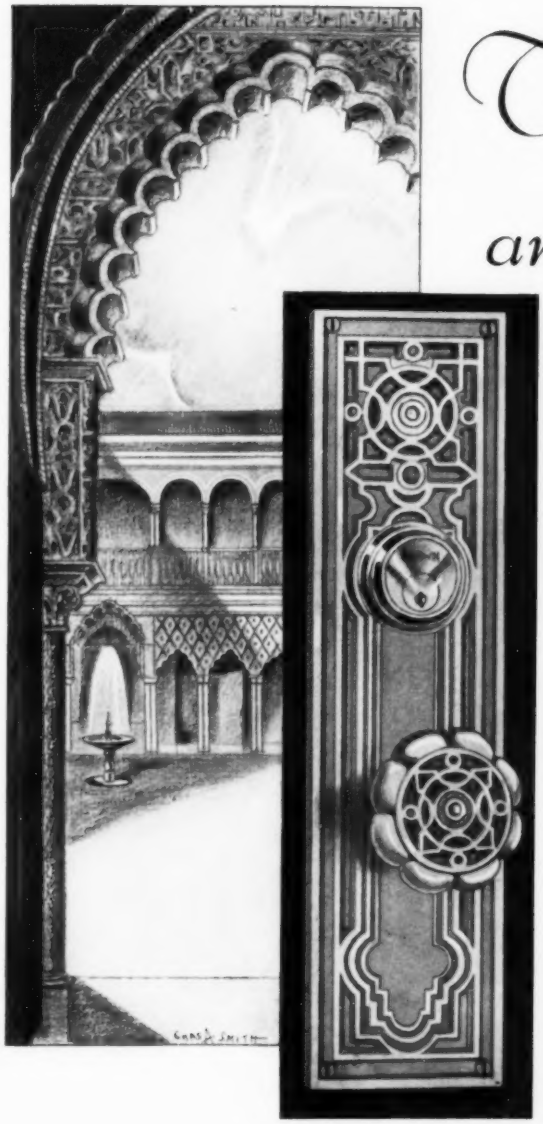
Thus this well-known railway takes all possible steps to safeguard its office workers as well as its operating personnel.

NORTON COMPANY, WORCESTER, MASS.

T-262



Sante Fe Railway General Office Building, Amarillo, Texas. Architect: E. A. Harrison, Chicago



The barbaric splendor and oriental beauty of **MOORISH ART** *faithfully revealed in* **EXCLUSIVE DESIGNS** *by* **RUSSWIN**

SWEEPING westward centuries ago, the Moors added to their own creative, artistic genius that of each mighty nation they conquered. Early in the Christian era, for example, they invaded and occupied Spain for several centuries. Today their influence is marked in the design and structure of that country's Cathedrals and Monasteries. Moorish is thus an art typifying many races. RUSSWIN presents several distinctive designs based on this source. And beneath these beautiful designs are base metals of bronze or brass. Such hardware is needed to last . . . to remain indefinitely in good working order . . . to save you from constant annoyance, repairs and replacements. And it costs but a trifle more than inferior hardware . . . certainly a small difference to pay for a lifetime of trouble-free service and satisfaction. Consult your architect or interior decorator, when making plans, and write to us for descriptive booklet covering RUSSWIN Hardware expressly made for leading periods of design. Russell & Erwin Manufacturing Company (The American Hardware Corporation, Successor), New Britain, Connecticut—New York, Chicago, London.

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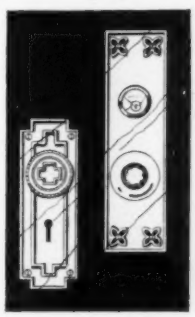

Two other exclusive designs by Russwin
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The savings in cost of redecorating the building, and renewing rugs and furniture is another item of saving experienced in more than 10,000 buildings now using the Spencer System.

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2 Store—Bedell's
G. A. Schonewald, Arch.
A. E. Doyle, Asso. Arch.

3 Office Bldg.—Weatherly
Sutton & Whitney, Arch.

4 Medical Dental Bldg.
L. L. Dougan, Arch.

5 Hotel—The New Heathman
DeYoung & Roald, Arch.

6 Theatre—The Portland
Rapp & Rapp, Arch., Chicago
DeYoung & Roald,
Asso. Arch., Portland

7 Bank—First National
Coolidge & Shattuck, Arch.

8 Club—Elks Temple
Houghtaling & Dougan, Arch.

9 School—Shattuck
F. A. Naramore, Arch.

10 School—Girls Polytechnic
George H. Jones, Arch.

11 School—Couch
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12 Theatre—The United Artists
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WAUTOMA, WISCONSIN
E. A. Stubenrauch, Architect
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WRIGHT RUBBER TILE

Rubber Only Material That Withstands Tire Road Wear

TONCAN

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TONCAN is the deadly enemy of rust and corrosion. Far beyond the life of other ferrous metals, Toncan wages its unceasing war on the forces of destruction.

That's why so many architects and engineers specify Toncan for down-spouting, flashing, cornices, window frames, ventilators and piping. That's why Toncan is so generally used where real permanence is required.

Toncan is an alloy of pure iron, pure copper and molybdenum. Rolled in the mills of America's largest and most highly specialized producers of alloy metals, Toncan has literally saved millions of dollars in repair bills for American industry.

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"THE BEST SALESMAN WE EVER HAD . . ."

ONE LOOK AT AN ALL-KOHLER BATHROOM . . . MAY CLINCH THE SALE

Bathroom in the Villa Locarno Apartment House, Kansas City, Missouri, having STANDISH *vitreous china lavatory and* VICEROY *tub, both with Kohler Dynamic fittings. Architect, Alonzo H. Gentry; Builder, McCanles Building Co.; Plumber, Latner Plumbing & Heating Co.; Jobber, Kellogg-Mackay Co.*

HOME HUNTERS these days are asking to see the bathroom first. They are looking for color, for good design, for modern convenience. They know that only fine plumbing fixtures and fittings can ever be good enough. And they know the meaning of the Kohler mark—in terms of beauty, efficiency, safety and permanence.

One builder stated that the Kohler installation he put in helped sell out his operation more than any other single feature of the job. Others are equally emphatic in giving special credit to Kohler colors and Kohler quality. Architects have found that all-Kohler bathrooms and kitchens have a charm all their own—a precision that adds years of perfect service.

Read the eleven important points about plumbing and figure for yourself how much Kohler fittings can add to the living comfort, the convenience, and the economy of the houses you plan. Specifications for all-Kohler installations please all concerned—builder, tenant, and owner. . . . Remember that Kohler fixtures deserve Kohler fittings. Kohler Co. *Founded* 1873. Kohler, Wis.—*Shipping Point*, Sheboygan, Wis. —*Branches in principal cities*. . . . Look for the Kohler mark on each fixture and fitting.

Bathroom in Eddystone Homes, 401 Melrose Street, Chicago, Ill., showing STANDISH *vitreous china lavatory with Kohler Dynamic combination fittings.* VICEROY *bath is equipped with Rapidrain. Architects, Holabird & Root; General Contractors, A. W. S. Construction Co.; Plumber, Charles R. Ewing, Jr.; Jobber, Western Plumbing Supply Co.*

ELEVEN IMPORTANT POINTS ABOUT PLUMBING

1 *Kohler designs* are decorative, purposeful, correct.

2 *Kohler enamel* is made by an exclusive formula, fused with an everlasting bond and keeps its smooth, glistening surface.

3 *Vitreous china* pieces are sculptured for beauty and service . . . vitrified at high temperatures and armored with a smooth, lustrous, lasting glaze.

4 *Kohler colors* are soft, livable pastels . . . the white is a perfect white.

5 *Kohler metal fittings* are engineered for efficiency . . . *heavily plated* with chromium, nickel or gold. They match the fixtures in style, character and quality.

6 *Materials* are the finest—*manufacture* is most particular. All Kohler products show craftsmanship and care.

7 This company *pioneered* many of the big advances in plumbing. This year's Kohler products are next year's new ideas.

8 Kohler quality extends to the *kitchen and laundry*—for every plumbing need.

9 Kohler quality *costs no more* . . . and saves money later.

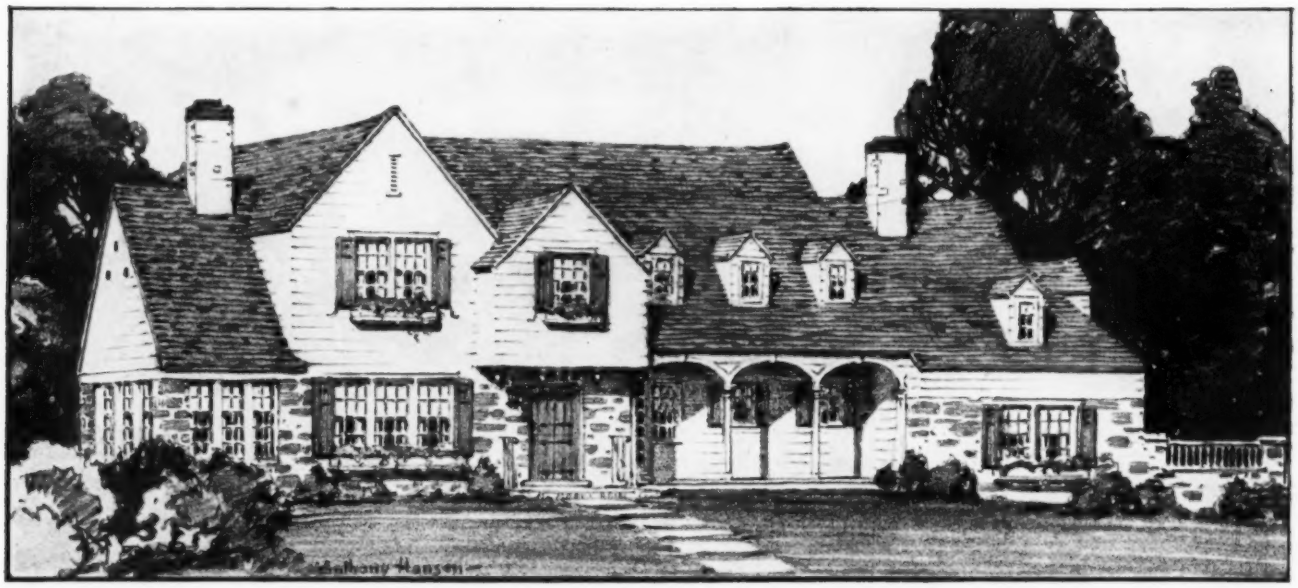
10 Kohler fixtures and fittings are handled and installed by qualified plumbers.

11 Back of the Kohler trade-marks are the traditions and spirit of *an entire community* . . . beautiful Kohler Village.

KOHLER OF KOHLER

PLUMBING FIXTURES

THE COAT OF METAL PROTECTION



Study the COST FIGURES for priming and back-priming this house with Aluminum Paint

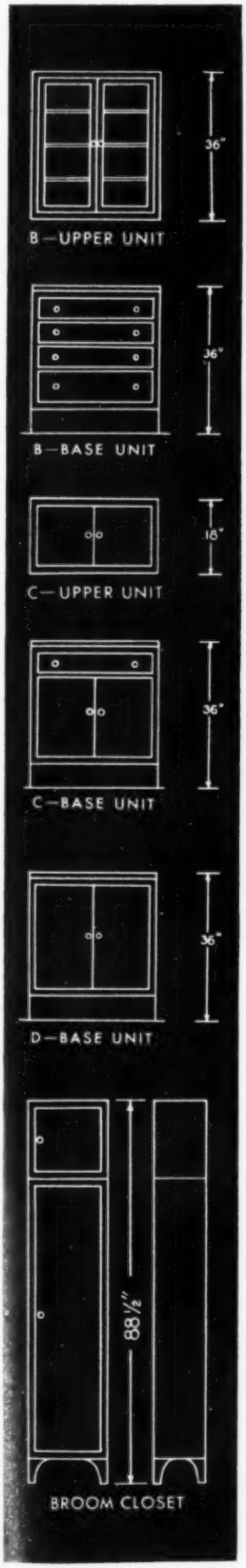
HOW does the cost of priming with aluminum paint compare with "lead and oil" priming? How much does "back-priming" add to the cost? The best way to answer these questions is to give comparative figures on a specific house.

The original estimate for painting the 10 room colonial house shown above, including interior and exterior knot sealing with shellac, priming *without back-priming*, with lead and oil and two finish coats was $1225.80. At the owner's request the specifications were altered to—Aluminum paint made with Alcoa Albron Powder and a suitable vehicle for priming *both front and back* of lumber. Knot sealing was of course unnecessary. The new figure, including the two finish coats, was $1300—only $74.20 extra for an infinitely better job. Moisture seeps into wood from both sides—priming and back-priming with aluminum paint checks moisture penetration. And as these figures prove, it adds very little to the expense of painting.

Aluminum Company of America does not sell paint. But aluminum paint made with satisfactory vehicles and Alcoa Albron Powder can be purchased from most reputable paint manufacturers, jobbers and dealers. Be sure the pigment portion is Alcoa Albron and is so designated. Let us send you the booklets, "Aluminum Paint, the Coat of Metal Protection" and "Specifications for Aluminum Paint". Address ALUMINUM COMPANY *of* AMERICA; 2467 Oliver Building, PITTSBURGH, PA.

ALCOA ALBRON
POWDER FOR
ALUMINUM PAINT

ALCOA ALUMINUM ALBRON



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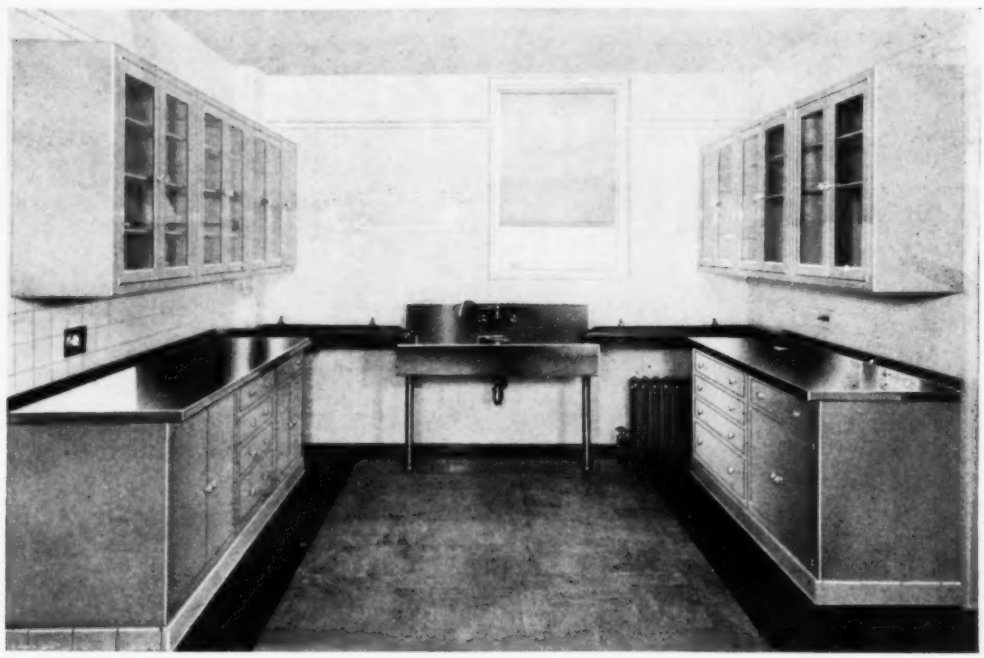
. . . equipped this Immaculate Kitchen efficiently • economically and permanently



An installation consisting of 7B-Upper Units; 2B-Base Units; 2C-Base Units and 1D Base Unit. Monel Metal tops insure lasting, unmarred beauty.

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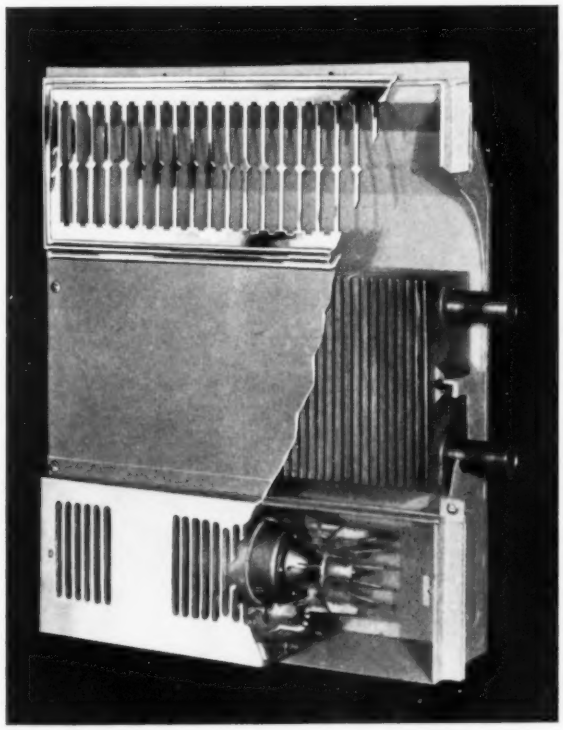

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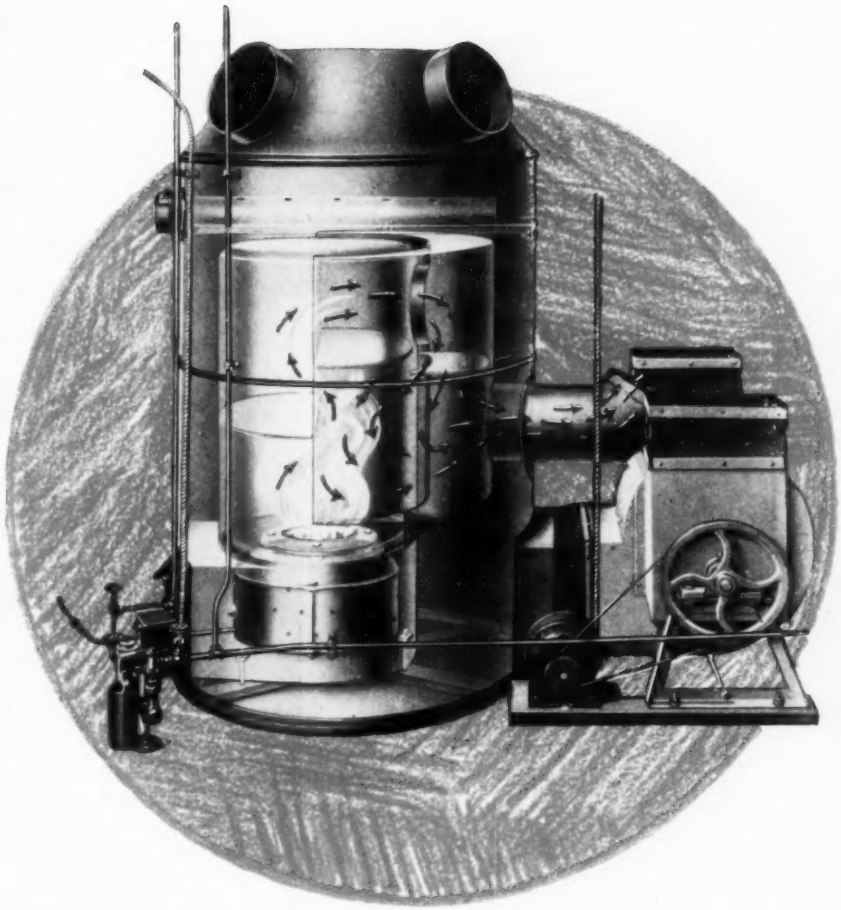

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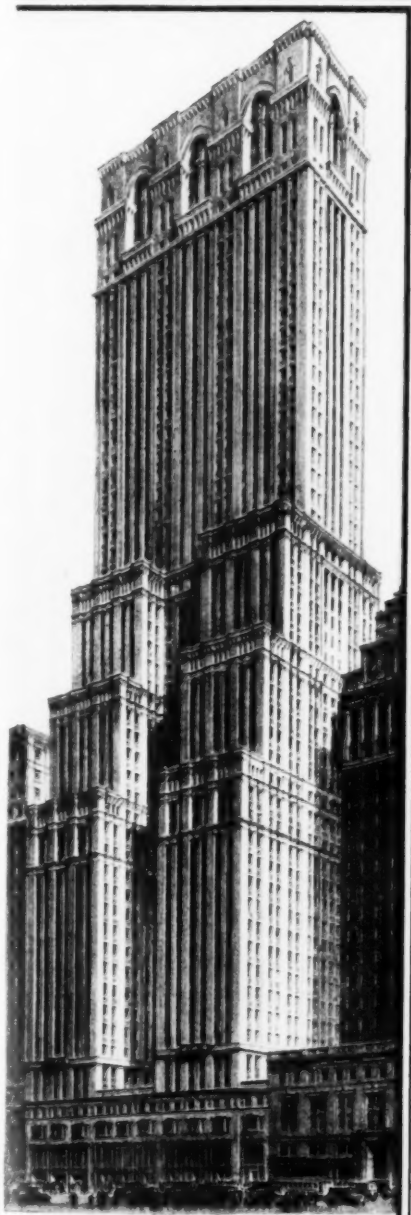

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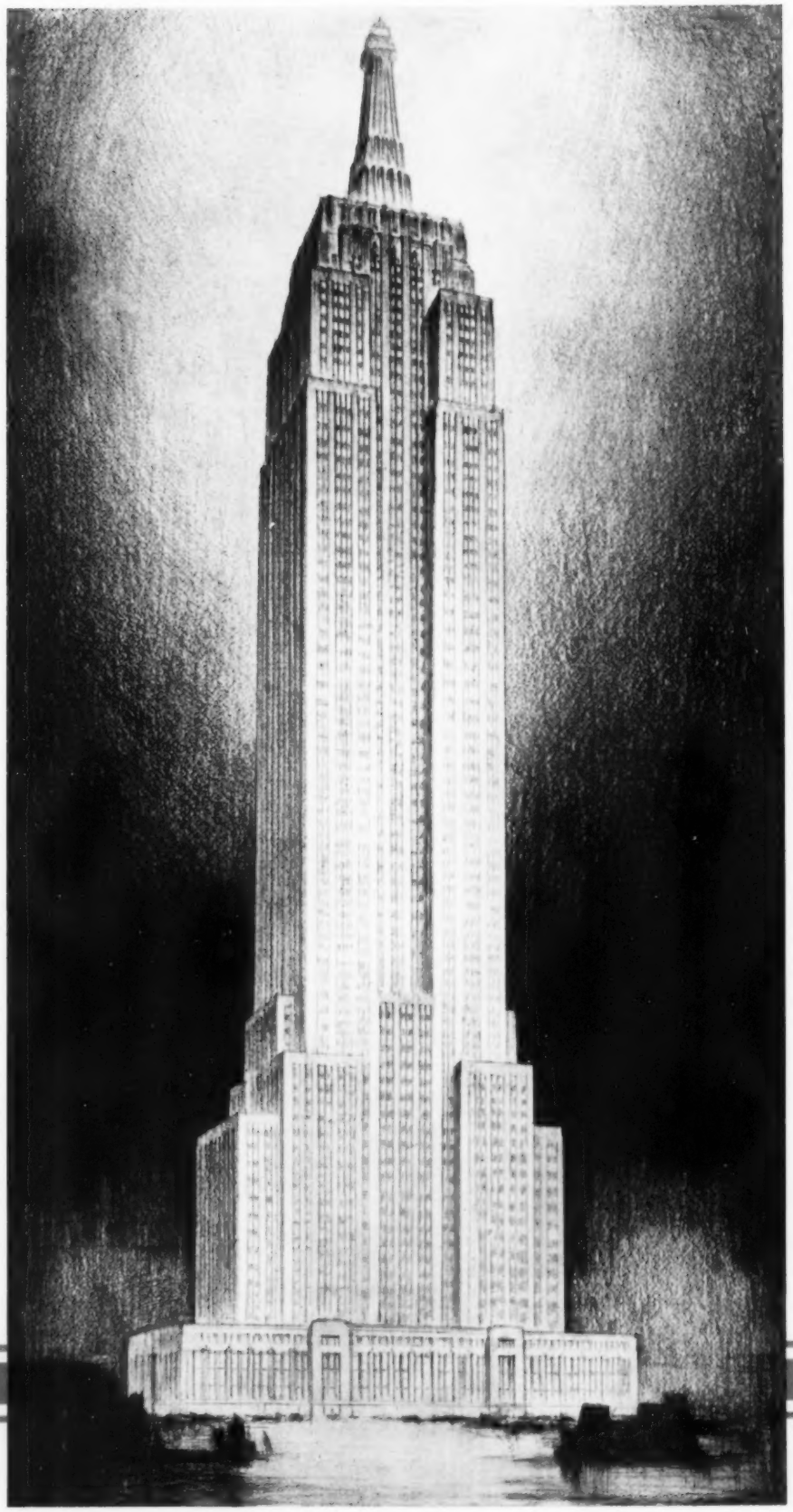

Preliminary Sketch
Perspective
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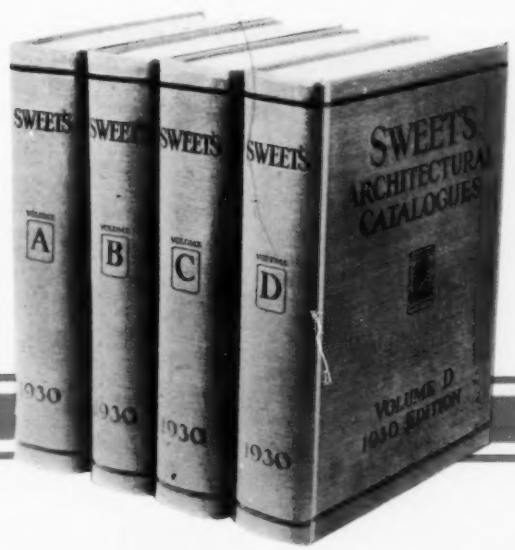

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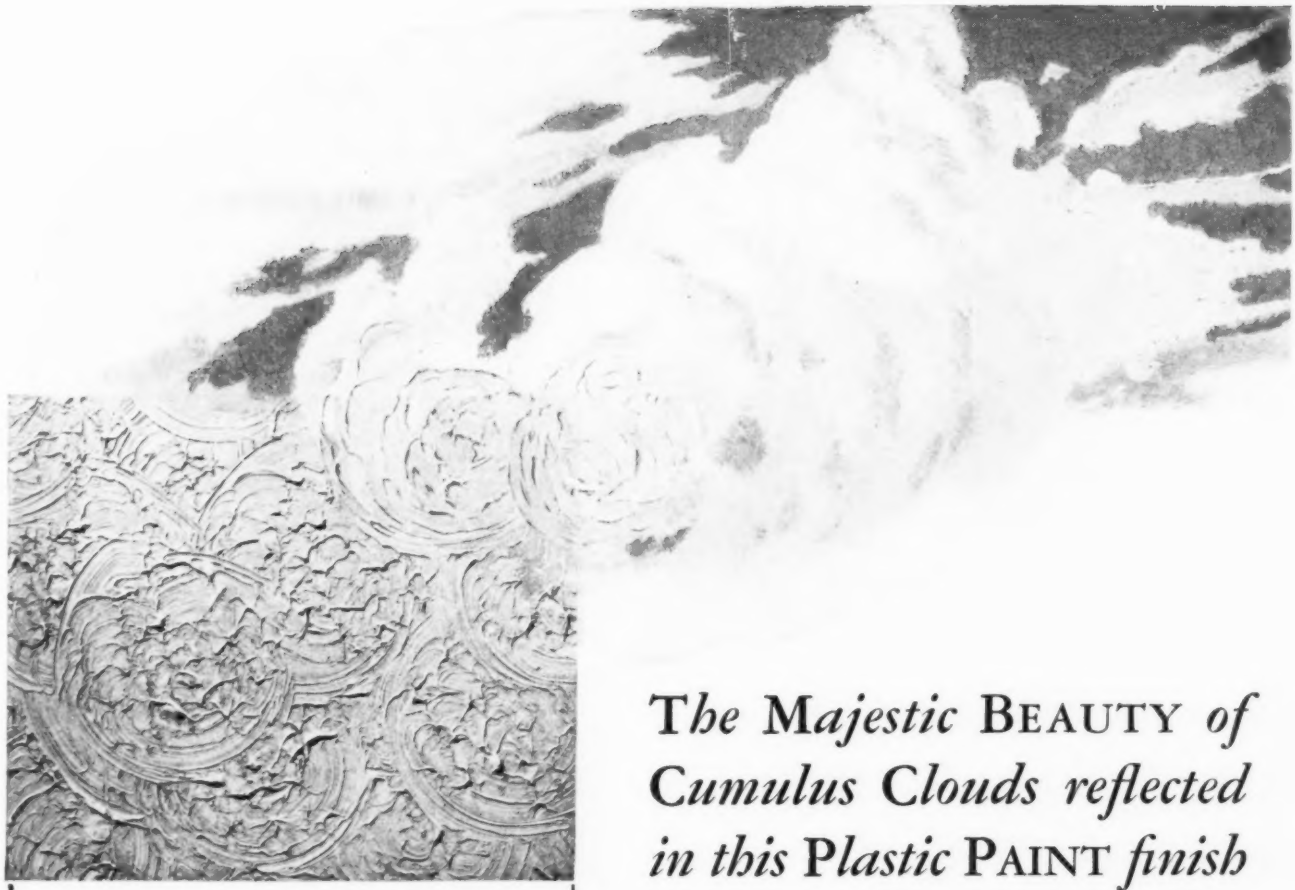
BOILERS *and* RADIATORS



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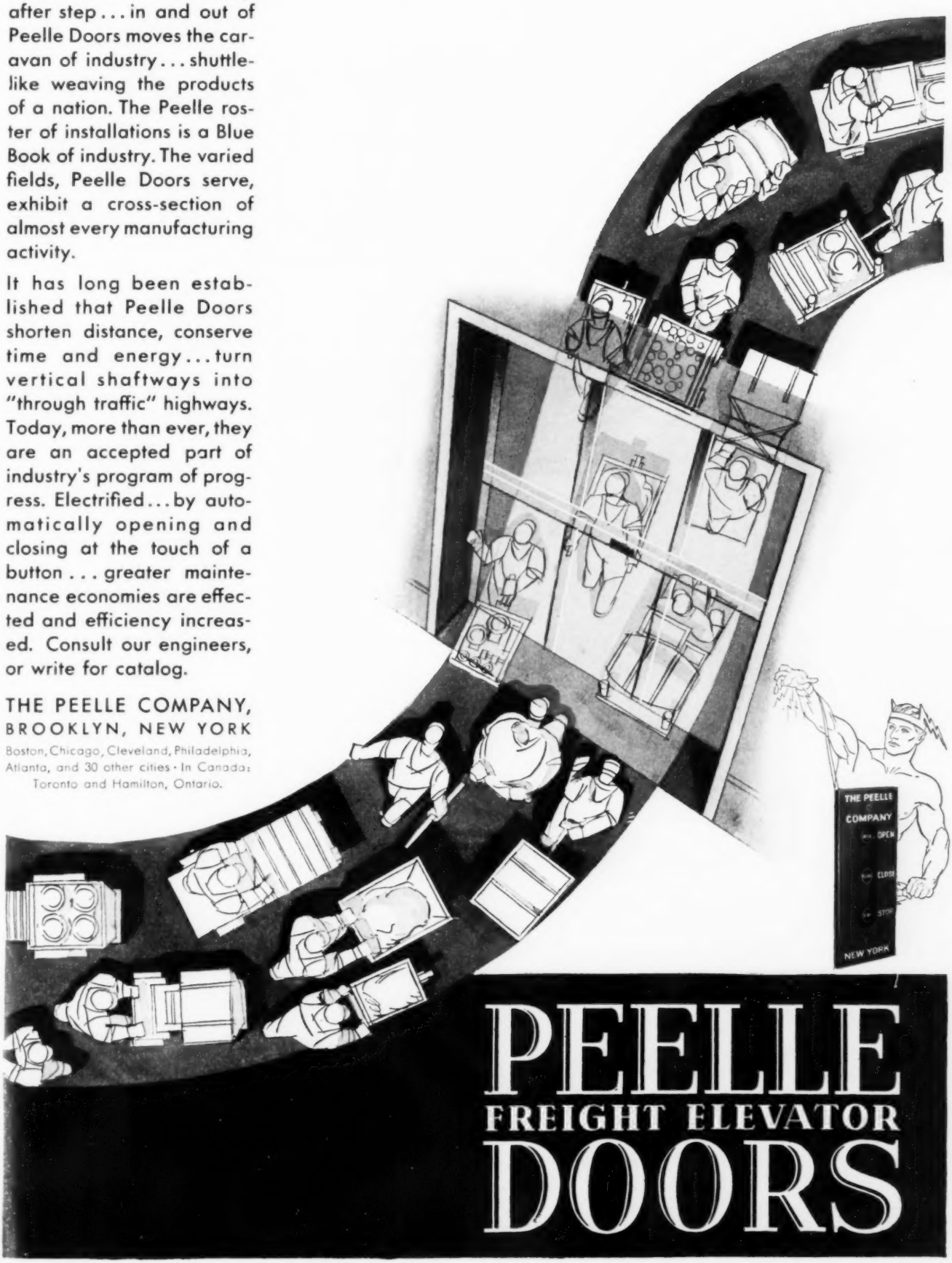

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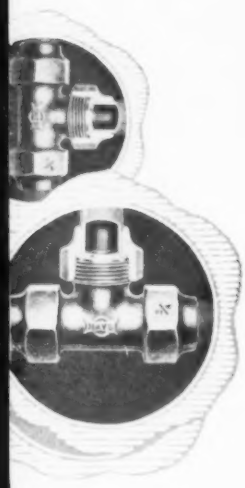

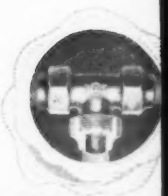

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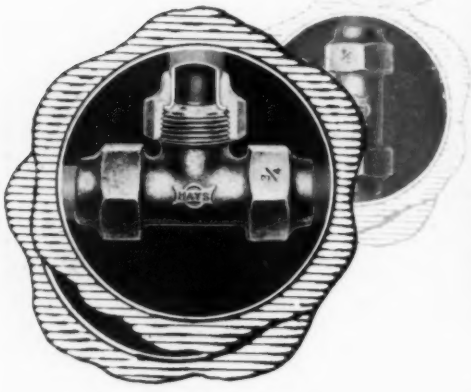

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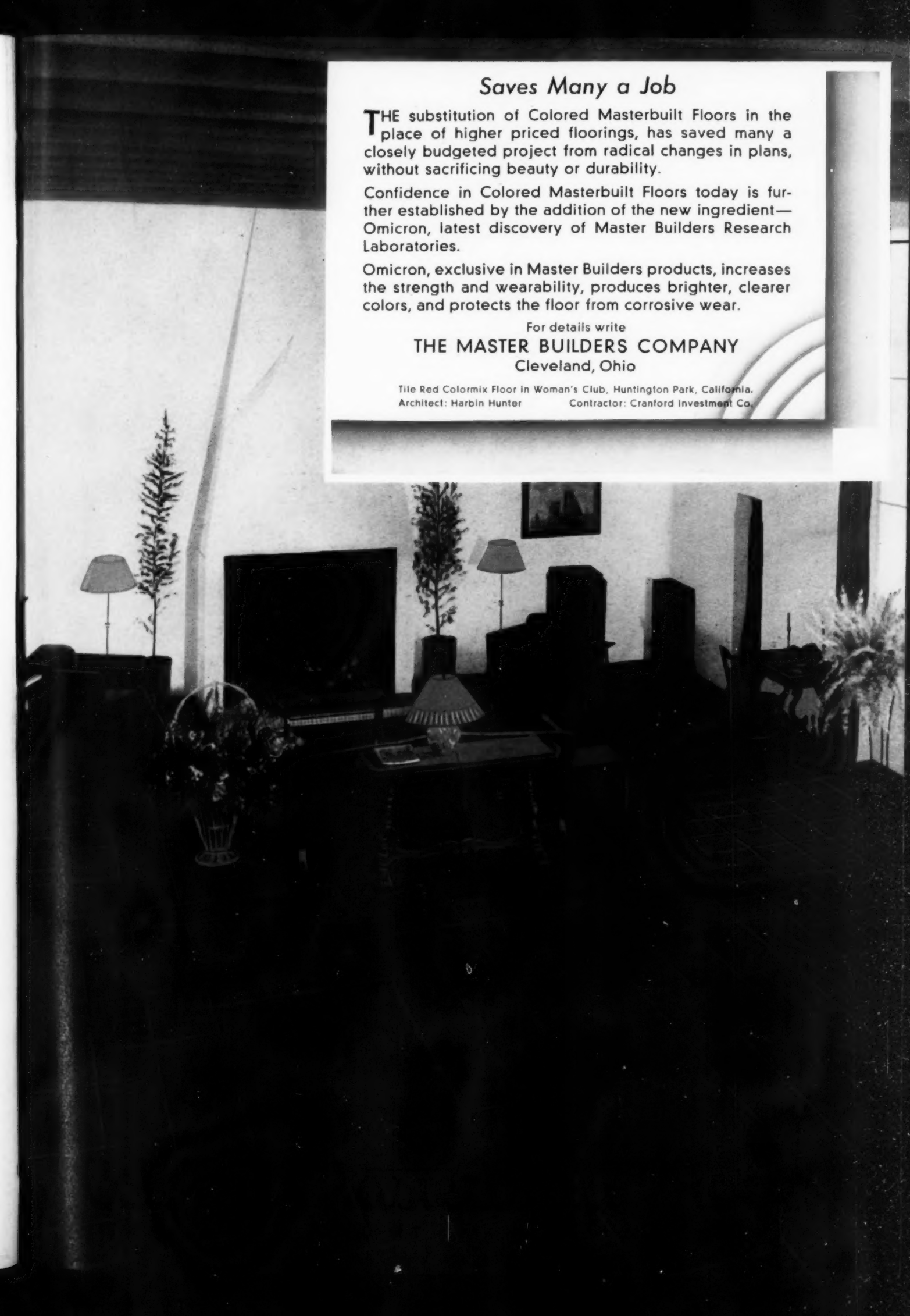

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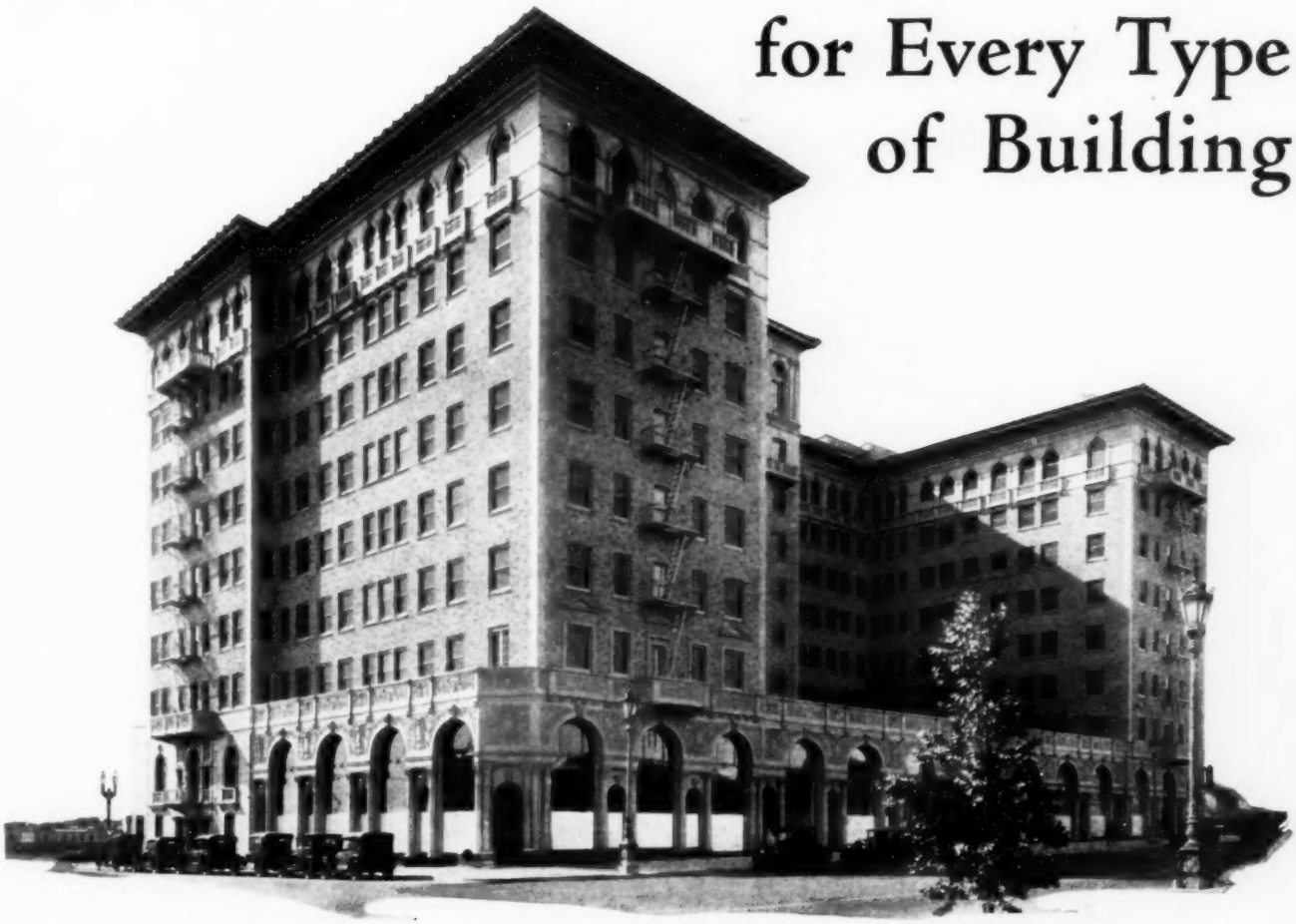

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we have made a wise choice.

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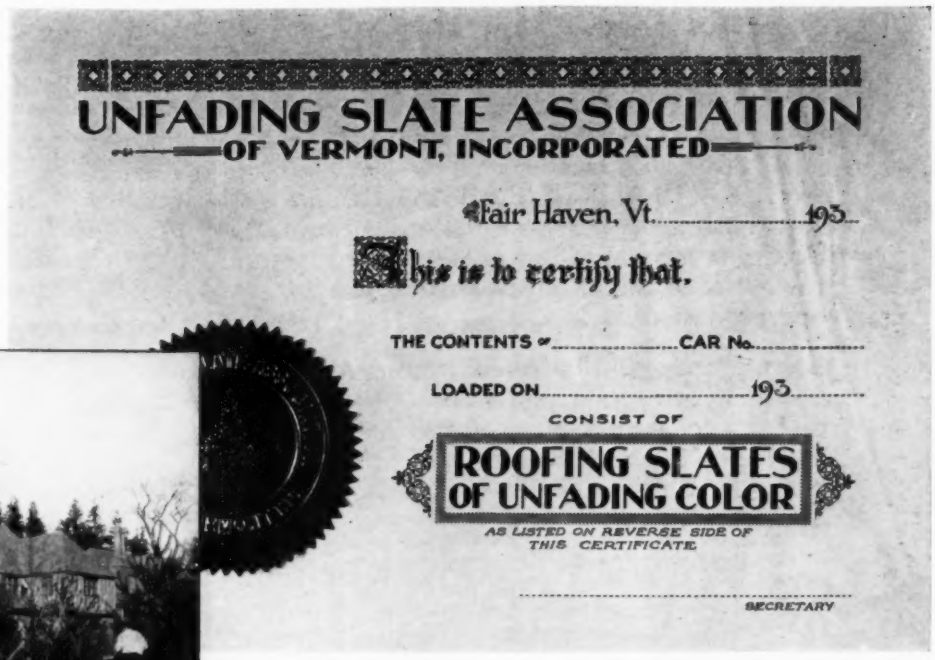

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Its proved performance is your assurance of pipe permanence

THERE IS NO UNCERTAINTY as to the quality of Youngstown Steel Pipe. Whether it is for a plumbing system, heating system, sprinkler system, refrigeration system or for power plant steam lines, the performance records of thousands of installations insure you of the same degree of lifetime service for your pipe installation.

And matching the proved quality of Youngstown pipe is Youngstown service, which is yours for the asking. When you are confronted with any problem involving the use of pipe, you will find the experienced steel counsellors of the Youngstown Sheet and Tube Company willing and anxious to serve you. A call to any of the twenty district sales offices listed below will bring you this service without obligation.

THE YOUNGSTOWN SHEET AND TUBE COMPANY

One of the oldest manufacturers of copper-steel, under the well-known and established trade name "Copperoid"
General Offices—YOUNGSTOWN, OHIO

275 tons of Youngstown pipe are used in the plumbing system of the Western Union Telegraph Building in New York City.
Architects—**VOORHEES, GMELIN & WALKER**
Plumbing Engineer—**MEYER, STRONG & JONES**
Builder—**MARC EIDLITZ & SON**
Plumbing Contractor—**GEO. E. GIBSON CO.**

DISTRICT SALES OFFICES

ATLANTA—Healy Bldg.
BOSTON—80 Federal Street
BUFFALO—Liberty Bank Bldg.
CHICAGO—Conway Bldg.
CINCINNATI—Union Trust Bldg.
CLEVELAND—Terminal Tower Bldg.
DALLAS—Magnolia Bldg.
DENVER—Continental Oil Bldg.
DETROIT—Fisher Bldg
KANSAS CITY, MO.—Commerce Bldg.
MEMPHIS—P. O. Box 462
MINNEAPOLIS—Andrus Bldg.
NEW ORLEANS—Hibernia Bldg.
NEW YORK—30 Church St.
PITTSBURGH—Oliver Bldg.
PHILADELPHIA—Franklin Trust Bldg.
SAN FRANCISCO—55 New Montgomery St.
SEATTLE—Central Bldg.
ST. LOUIS—525 Louderman Building
YOUNGSTOWN—Stambaugh Bldg.

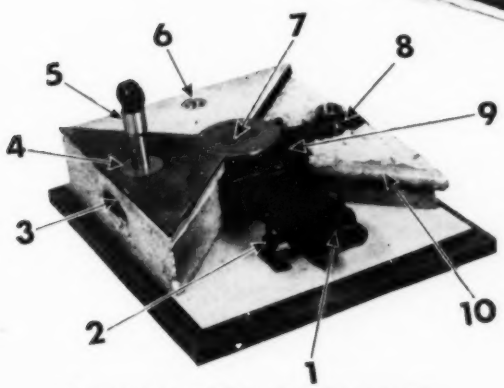
LONDON REPRESENTATIVE
The Youngstown Sheet Products Co.
Dashwood House, Old Broad St.,
London, E. C. England

YOUNGSTOWN

GALVANIZED SHEETS PROTECT ∴ ∴ ∴ ∴ ∴ SAVE WITH STEEL

G-E FIBERDUCT

Makes Wiring Simple to Plan and Install



CUTAWAY MODEL G-E FIBERDUCT AND FITTINGS

1. G-E Fiberduct.
2. Coupling-support with leveling screws.
3. Oval crown 1 in. below surface molds strong concrete arch.
4. Brass floor flange flush with linoleum.
5. Lighting outlet, brass standpipe, bakelite head.
6. Brass insert; grouted—can't pull out.
7. Adjustable-height cover recessed for linoleum.
8. Brass insert threads into duct.
9. Heavy one-piece iron junction box with leveling screws.
10. Conduit for feeder lines.

G-E Fiberduct—the modern raceway for underfloor wiring in concrete—aids both architect and electrical contractor.

The architect can specify outlets *exactly* where he wants them . . . additional ones can go in practically *anywhere, any time,* quickly, economically. Thus he provides wiring adequate for today *and the future.*

Contractor's men find installation of G-E Fiberduct simple. It cuts with a wood saw . . . joins with clamps . . . levels readily with screws. Wire pulls in easily. Brass fittings adjustable for height and surface neatness.

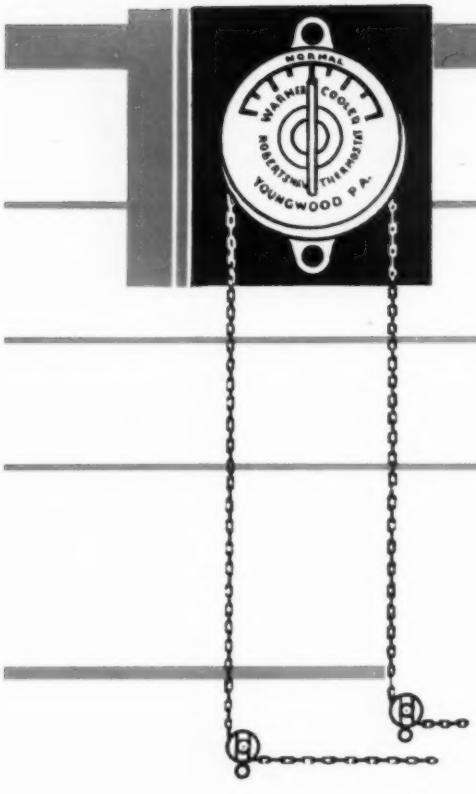
G-E Fiberduct is non-corrodible . . . made for the life of the building. Deliveries from G-E Distributors' stocks are prompt everywhere.

For further information, please write Section C-156, Merchandise Dept., General Electric Co., Bridgeport, Conn.

GENERAL ELECTRIC

▲ FIBERDUCT AN ELEMENT OF THE G-E WIRING SYSTEM ▲

MERCHANDISE DEPARTMENT GENERAL ELECTRIC COMPANY BRIDGEPORT, CONNECTICUT



NEW

Instantly sells itself to every coal-fired warm air furnace owner . . . profitable too!

HERE'S a simple, easily installed Furnace Thermostat that ends forever the annoyance of regulating draft and check dampers . . . that ends the nightly task of "banking" furnace fires; that keeps the whole house uniformly warm!

Made by Robertshaw . . . leading manufacturer of thermostatic devices. It's accurate. It's foolproof. It's an improvement on any similar furnace heat control ever presented. And priced so low that every furnace owner can afford one . . . yet it brings the dealer a handsome profit!

For the first time, automatic control of the furnace temperature is secured by a *gradual* opening and closing of the dampers.

ECONOMICAL The new Robertshaw Furnace Thermostat saves at least 20% of the average annual fuel bill. It keeps the fire constantly at just the temperature you wish. It makes the sudden flare-up of heat and subsequent cooling-off impossible. It evenly regulates burning so as to consume every atom of energy in the fuel!

That's only one saving. Robertshaw's new Furnace Thermostat reduces furnace depreciation; keeps repair costs down. The single overheating sufficient to ruin any furnace is impossible with the Robertshaw Furnace Thermostat in operation! Cracked fire chambers and burned casings are avoided, too, thus prolonging indefinitely the life of the furnace.

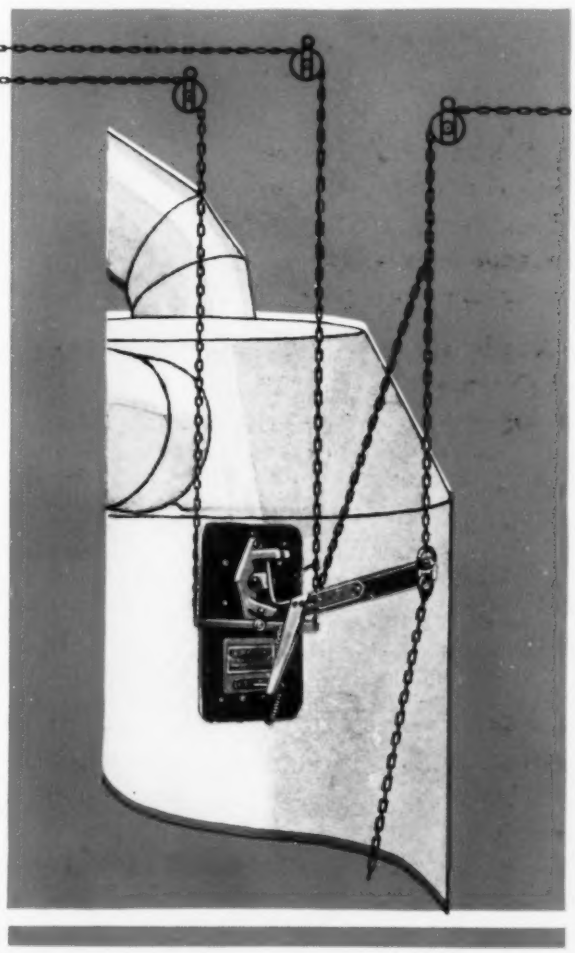
Being *non-electrical,* the installation of the Robertshaw Furnace Thermostat is simple and does not require the expensive services of an electrician.

A TRUE SAFEGUARD Now . . with the Robertshaw Furnace Thermostat installed . . the householder can leave his home at any time, in full security. He knows that with the Furnace Thermostat adjusted, dangerous overheating is

ROBERTSHAW THERMOSTAT COMPANY · *Youngwood, Pa.*

ROBERTSHAW
FURNACE
THERMOSTAT

$35.00 complete ready to install



impossible. He knows that if the Furnace Thermostat fails to operate, the drafts will automatically *close*. He knows that his flues are safe from fire hazard.

At night, "banking" is unnecessary. Put in an abundance of fuel . . enough to last overnight. Set the Furnace Thermostat and go to bed. Nothing more is necessary. The fire will burn slowly, evenly, all night long. Wake up to a comfortable temperature in the morning and if you want it warmer turn the Furnace Thermostat . . . . . instantly the fire warms up to just the temperature you want . . . . keeps burning exactly even as long as the fuel lasts!

WRITE FOR DETAILS Address a post-card to Robertshaw for further information. Learn how this great New Furnace Thermostat can make you more friends and longer, quicker, more satisfactory profits!

Western Electric Uses 1,196,000 Sq. Ft. of Gypsteel Pre-Cast Roofs

Some of the buildings of the Western Electric Co. constructed with the Gypsteel Pre-Cast Roof System.

WESTERN ELECTRIC
Approves Gypsteel Pre-Cast Roofs
both in tests and actual use of 1,196,000 Sq. Ft.

WHEN Western Electric Company Engineers were first told about the advantages of Gypsteel Pre-Cast Roofs for factory buildings six years ago, they insisted upon making tests of this material.

These tests were made. They were satisfied as to its strength, fire resistance, durability, etc. Results and cost comparisons with other kinds of roofs were satisfactory, and this great industrial leader placed its initial order with us.

This has since been followed by others, the complete record being 1,196,000 square feet of Gypsteel Pre-Cast Roofs covered by 14 contracts, for Western Electric buildings at Kearny, N. J., Hawthorne, Ill., New Haven, Conn., and Baltimore, Md. Enough to cover over 29 city blocks 200′ square.

Actual experience since 1924 with Gypsteel Pre-Cast Roofs has borne out the tests Western Electric made then, and shown beyond doubt the numerous savings and advantages secured through the use of Gypsteel Pre-Cast Roofs.

The whys and wherefores are all explained in our Roof Catalog. May we send it to you?

GYPSTEEL

Pre-Cast Long Span and Short Span Roofs are made only by this Corporation

General Offices: Linden, N. J.

STRUCTURAL GYPSUM CORPORATION

Sales Offices in Principal Cities

SUBJECT TO HIS APPROVAL

Time—That Tough Old Tester of everything in this world—writes the final "Okay" on the materials that make up any structure.

For Time alone can tell whether those materials are worthy—serving faithfully through the years, or causing trouble and expense long before completing their expected life-span.

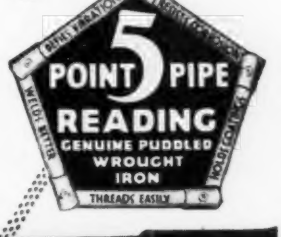
In the important matter of piping, so vital to permanence, Time has spoken clearly. His verdict—today as eighty years ago—is Genuine Puddled Wrought Iron for lasting pipe economy and satisfaction. No other pipe material has proved so successful in withstanding all the attacks of Time and his destructive henchmen—corrosion, vibration, leaky joints and the rest.

Reading 5-Point Pipe is made of Genuine Puddled Wrought Iron, that rust-resisting, strain-defying metal of the ages. That is why you can specify Reading 5-Point Pipe with the confidence that it will outlast ordinary pipe two to one, and probably five to one!

READING IRON COMPANY, Reading, Pennsylvania

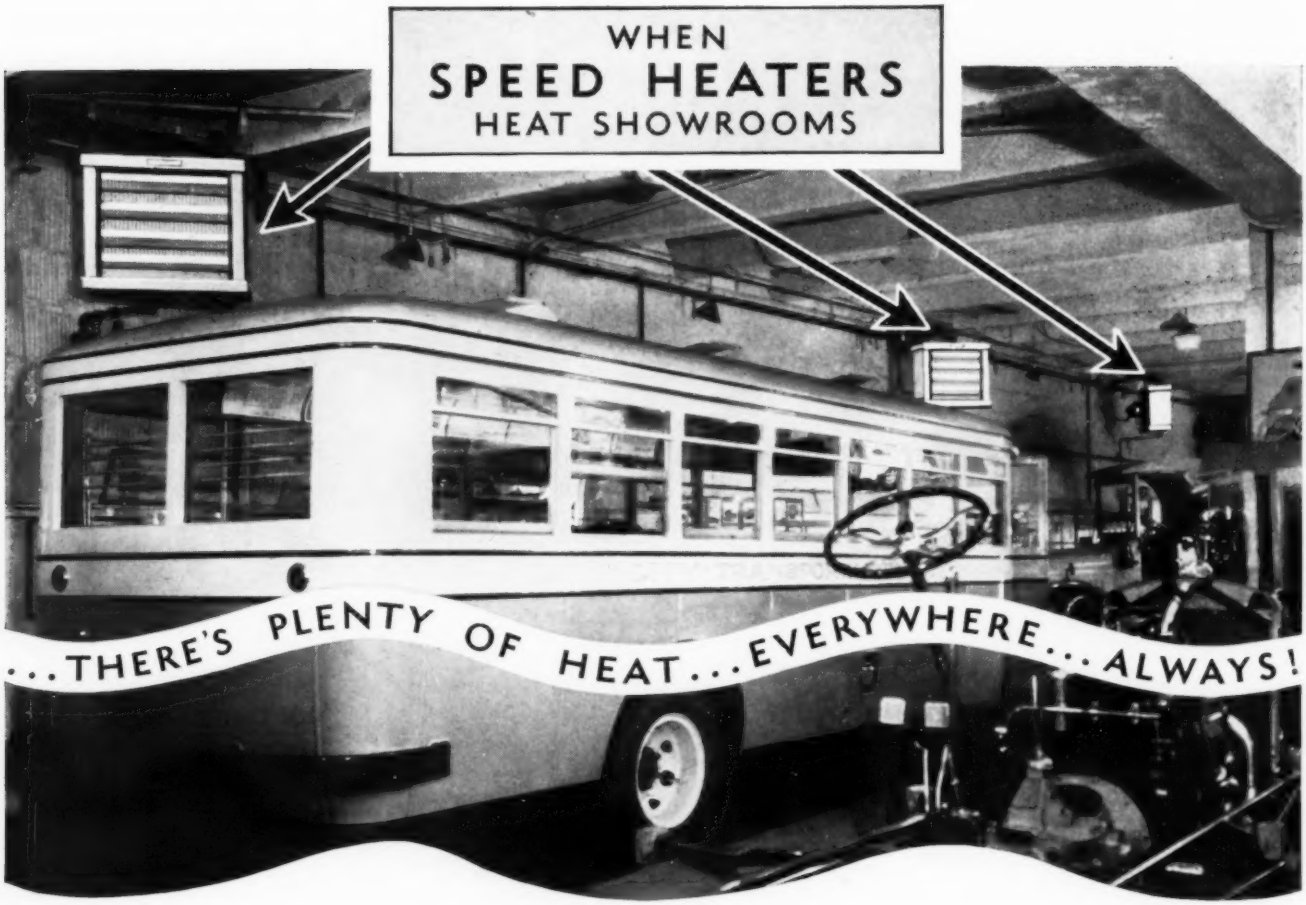
Use only Reading 5-Point Nipples with Reading 5-Point Pipe—you'll know them by the indented spiral band

For Your Protection This Indented Spiral Forever Marks All



GENUINE PUDDLED WROUGHT IRON
READING PIPE
DIAMETERS RANGING FROM ⅛ TO 20 INCHES

Science and Invention Have Never Found a Satisfactory Substitute for Genuine Puddled Wrought Iron



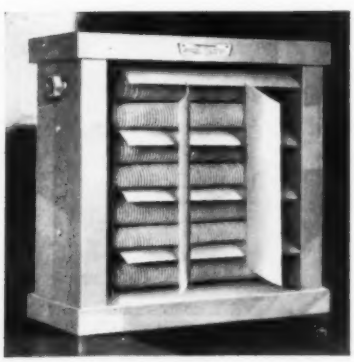
Showroom of Mack Trucks, Inc., 440 Lexington Avenue, N. Y. C. Equipped with Sturtevant Speed Heaters.

THAT'S the beauty of Speed Heaters! Heat in abundance ... *thoroughly distributed!*

No job is too tough for them. Ceilings may be 30 feet high ... floor area as large as a farm ... and swept by drafts. But Speed Heaters will kill the cold ... get heat to where it's needed ... efficiently ... with speed!

Showrooms, auditoriums, large stores, factories, warehouses, garages, gymnasiums and other large areas ... all are now being heated by Speed Heaters instead of by ordinary radiators. For Speed Heaters mean better heating ... and a worth while saving of steam in the bargain.

Why not get all the interesting facts about this equipment *now?* Send for these two bulletins: (1) The Speed Heater ... A short talk on a radically new development in heating apparatus; (2) Complete Data on Speed Heaters for architects.



B. F. STURTEVANT COMPANY

Plants and Offices at: Berkeley, Cal. • Camden, N. J. • Framingham, Mass. Galt, Ontario • Hyde Park, Mass. • Sturtevant, Wis.

Branch Offices: Atlanta; Baltimore; Boston; Buffalo; Camden; Charlotte; Chicago; Cincinnati; Cleveland; Dallas; Denver; Detroit; Hartford; Indianapolis; Kansas City; Los Angeles; Milwaukee; Minneapolis; Newark; New York; Omaha; Pittsburgh; Portland, Me.; Portland, Ore.; Rochester; St. Louis; San Francisco; Seattle; Washington, D. C. *Canadian Offices:* Toronto; Montreal; Galt. *Canadian Repre:* Kipp Kelly, Ltd., Winnipeg. *Agents in Foreign Countries*

Sturtevant (REG. U. S. PAT. OFF.) **SPEED HEATERS**

FEDERAL SEABOARD TERRA COTTA

Convention Hall at Asbury Park
New Jersey

Architect — Warren & Wetmore

General Contractor
Turner Construction Co.

Terra Cotta — Federal Seaboard
Terra Cotta Corp.

NO other material but Terra Cotta could give the permanent sparkling color effects demanded by the design of this building . . . Buff multi-chrome Terra Cotta, large scale pieces, bright polychrome, shaded ornamentation including fire gilt provide the outstanding decorative features of this new gigantic Convention Hall.

FEDERAL SEABOARD TERRA COTTA CORPORATION

ARCHITECTURAL
TERRA COTTA
MANUFACTURERS

F S T C

OFFICES
10 EAST 40th STREET
NEW YORK CITY
TELEPHONE ASHLAND 1220

FACTORIES: PERTH AMBOY, N. J. • WOODBRIDGE, N. J. • SOUTH AMBOY, N. J.

KNIGHT-WARE

in the

Chemistry Building

Chemistry Buildings at these institutions are equipped with KNIGHT-WARE

PRINCETON UNIVERSITY
COLUMBIA UNIVERSITY
WEST VIRGINIA UNIVERSITY
OHIO STATE UNIVERSITY
JOHNS HOPKINS UNIVERSITY
NEW YORK UNIVERSITY
WASHINGTON UNIVERSITY
DUKE UNIVERSITY
PURDUE UNIVERSITY
PENN STATE COLLEGE
LAFAYETTE COLLEGE
BATTELLE MEMORIAL
McGILL UNIVERSITY

Specify
KNIGHT-WARE
Waste and Drain Lines
Ventilating Ducts
Laboratory Sinks
Sumps and Catch Basins
Ventilating Flue Caps

KNIGHT-WARE
"IT IS THE BODY ITSELF"

If the following facts interest you—

KNIGHT-WARE costs less than most acid proof materials. Your initial cost is your LAST cost.

KNIGHT-WARE is easily and economically installed. Waste and Ventilating Pipe and Fittings are hung in much the same manner as ordinary materials. Joints are easily packed and result in permanent leak and acid proof connections.

Positively unaffected by acids, alkalies, chemicals or corrosive solutions and gases and highly resistant to abrasion, there is no wear-out in KNIGHT-WARE. *It lasts the life of the building.*

Consult us.

MAURICE A. KNIGHT

OFFICE AND PLANT
AKRON, OHIO

New York City
804 World Building

Philadelphia
1600 Arch Street

San Francisco
Merchants Exchange Building

Niagara Falls
309 United Office Building

Montreal, Que.
1307 Notre Dame Street, West

ZENITHERM

FLOORINGS in beautiful HADDON HALL

RANKIN & KELLOGG,
Architects,
Philadelphia, Penna.

CHAPMAN DECORATIVE CO.
Interior Decorators,
Philadelphia, Penna.

HADDON HALL recently spent six million dollars in completely modernizing this famous Boardwalk Hotel at Atlantic City. The idea was a complete expression of modern day beauty and comfort for their guests!

Zenitherm flooring, which "looks and wears like marble, yet is worked like wood," was chosen for the corridors, the four dining rooms, the Chinese Mandarin Room, the West Room, the Barber Shop, and the Sun Room—*all* decorated in *different* designs, thus emphasizing the adaptability of Zenitherm's twenty-one color tones to *any* decorative scheme. Indeed, the Zenitherm flooring in the Sun Room was worked out to represent the six Wampum belts that were given in trade when William Penn purchased Pennsylvania from the Indians.

Zenitherm offers a permanent investment in good appearance—for floors, walls, terraces,—in homes and offices, as well as clubs, hotels, and public buildings. When used for exteriors, it actually toughens under the elements. See Sweet's Catalog B2286-7-8-9 for complete color chart and information on how to specify Zenitherm for use inside or outside, over wood, concrete, or brick.

ZENITHERM

(For Walls and Floors)

ZENITHERM COMPANY, Inc., KEARNY, NEW JERSEY
110 EAST 42nd STREET, NEW YORK, N. Y.

PHILADELPHIA CHICAGO BOSTON SAN FRANCISCO DETROIT

TE-PE-CO *in the School*

Asheville High School and Junior College, Asheville, North Carolina
Architect—DOUGLAS D. ELLINGTON
Plumbing Contractors—PICKARD & CO., through Hajoca Corp.

THE "Universal" Closet has all the advantages of the wall-hung closet plus a simplified installation that requires no carrier. Its center of gravity is within itself. Full syphon jet construction with extended lip and a large vent passage from the bowl opening vertically into the pipe chamber.

The pipe corridor has long been popular in the planning of buildings where closets must be used in groups. The economy of this installation is obvious. With the "Universal" a quite narrow corridor is possible. Venting is accomplished at no cost. All supplies and wastes, being back of wall, permit use of rough material, a saving in both material and labor. The outlet being in the corridor also avoids the necessity of dropping or boxing the ceiling.

The fine syphon jet construction, large water surface, oversize trapway, and strong action make the Universal Closet ideal for all types of public building construction.

THE TRENTON POTTERIES COMPANY
Trenton, New Jersey, U. S. A.

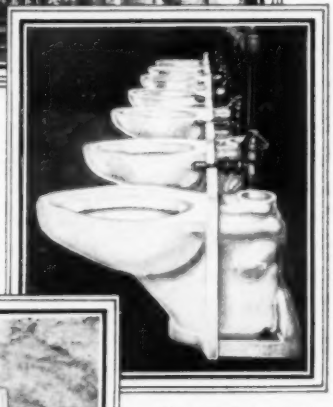
NATIONAL SHOWROOM
New York City, 101 Park Ave.
Entrance on 41st St.

BRANCH OFFICES
Boston, Philadelphia and
San Francisco

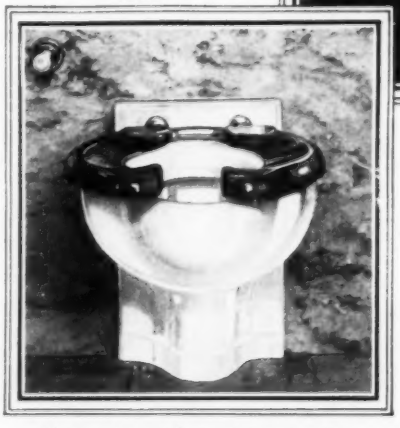
Export Office: 115 Broad Street, New York City

OUR GUARANTEE—We make but one grade of ware—the best that can be produced—and sell it at reasonable prices. We sell no seconds or culls. Our ware is guaranteed to be equal in quality and durability to any sanitary ware made in the world. The Te-pe-co trade-mark is found on all goods manufactured by us and is your guarantee that you have received that for which you have paid.

Detailed view of building from campus



Battery of Universal closets before setting partitions.



Universal closet as seen from room after finished installation.

TE-PE-CO
ALL-CLAY PLUMBING FIXTURES

MARSH presents *truly modern heating*

One good example of outstanding Marsh engineering is this strikingly new radiator valve.

Modern lines now give distinction to this vital unit. The attractive design is beautifully set off by an enduring two-tone finish, polished surfaces being of lustrous chromium.

Crowning this latest achievement, is the ultra modern control wheel which combines hand fitting comfort with appealing design.

The beauty of Marsh products is more than skin deep. An x-ray of this new Marsh Product shows a modern development of interior design—exclusive with Marsh—with a smooth operating control and sturdy, enduring construction.

See the nearest Marsh representative for complete details of this valve.

Increased activity in rapidly expanding markets has made it necessary to increase the number of our representatives. Sales engineers experienced in these or similar lines are invited to write. If your territory is open, this may mean a valuable connection.

JAS. P. MARSH & CO.

(DIVISION OF COMMERCIAL INSTRUMENT CORPORATION)

Home Office: 2083 Southport Ave.
Chicago, Illinois

551 Fifth Ave., New York City
2539 Pennsylvania Ave., N. W.
Washington, D. C.
Bendix Bldg., Los Angeles

Other offices in principal cities

CONNECTICUT

lights the way

In truly modern hotels, clubs, theatres, hospitals and homes, Connecticut Night Lights furnish safe, trouble-free, economical and attractive floor illumination.

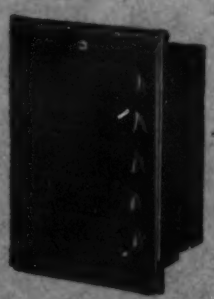
Dome type night light without switch.

Connecticut Night Lights fit flush in the wall and spread their light effectively on the floor.

Dome type night light with switch.

Distinctive Connecticut construction eliminates maintenance costs . . . the Bulb replacement can be made by anyone and takes but a moment.

Operating costs are negligible with Connecticut Night Lights. Illumination is so effective that 10 or 15 watt bulbs give ample light.



Louvred night light—available for vertical or horizontal mounting

An engineering background of 36 years makes these distinctive lights possible. Truly, *Connecticut Lights the Way.*

CONNECTICUT TELEPHONE & ELECTRIC CORPORATION

(Division of Commercial Instrument Corporation)

54 BRITANNIA STREET MERIDEN, CONNECTICUT

Connecticut Telephone & Electric Corp., 54 Britannia Street, Meriden, Connecticut
Gentlemen: Please send me latest literature describing night lights and other equipment in detail.

Name..... Address.....

City..... State.....

Residence
Oyster Bay, L. I.

Delano & Aldrich
Architects

MONSON LUSTRE ROOFING SLATE

The architect who is seeking the finest type of unfading black slate will find his requirements perfectly met in Monson Lustre: for this slate has no equal for strength, lasting quality, and beauty.

Monson Lustre is mined and shipped directly from our quarries to the job, and receives the same strict supervision and inspection as our other slate.

Since this beautiful black slate does not cost much more to quarry, and no more to lay than inferior slates, a truly high class roof may be specified without fear of seriously increasing the total cost of the building.

Rising-and-Nelson-Slate-Company

WEST PAWLET, VERMONT

Architects' Service Department: 101 Park Avenue, New York City

CHICAGO DETROIT PHILADELPHIA BOSTON

Judged on the basis
of appearance and permanence

EXTERIOR LIGHTING FIXTURES

by

SMYSER-ROYER

will meet every requirement

A·L·E·A

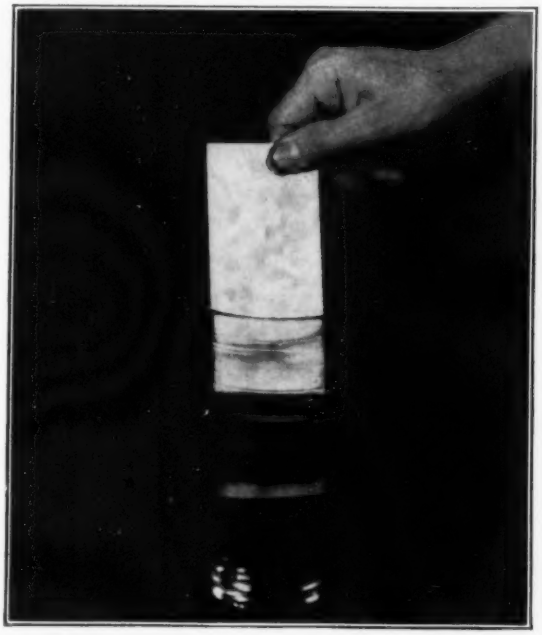
SINCE 1840 Smyser-Royer craftsmen have been supplying exterior lighting fixtures for America's foremost architects. Ninety years of experience in faithfully interpreting and executing the architect's plans has enabled the Smyser-Royer Company to produce fixtures that are perfect in every detail, yet as durable as the building itself.

If an original design is not needed, the Smyser-Royer Catalogue will reveal a wide selection of artistic designs, created by craftsmen to meet all the needs of modern lighting.

In Sweet's Catalogue, Section D, pages 5334 to 5344, two hundred Smyser-Royer fixtures for every period and purpose are illustrated.

SMYSER-ROYER COMPANY, *Main Office and Works,* York, Pa.

Philadelphia Office, 1700 WALNUT STREET



Try this test

TAKE a glass of diluted sulphuric acid (two parts water, one part acid). Place a strip of the best galvanized roofing in this solution. *Let it stay there five minutes.* Note how quickly the acid eats away the coating. In every smoky locality sulphuric acid is slowly but surely eating away the roofing. Soot forms on the roof, rain water mixes with it to form acids which stain and corrode even copper.

—then—

Try this one

PLACE a strip of LEADCLAD in the same solution as above. *Let it stay there twenty-five minutes or longer* and notice that the PURE LEAD coating has not been harmed. That explains why LEADCLAD lasts years longer. The natural acids formed by rain and smoke neither corrode nor stain it. Its copper bearing steel base is rust resisting... its PURE LEAD coating is rustproof.

There is a LEADCLAD product for every roofing need. It is made in all standard forms with a complete line of drainage products.

Wheeling Metal & Mfg. Company

WHEELING, WEST VIRGINIA

LEADCLAD COPPER

Here is an all time roofing material. It has a base of pure copper to which is fused a thick coating of pure lead. Permanent, non-staining. Particularly recommended for flashings, gutters, leader heads, conductor pipe and all drainage accessories. Made in two finishes, Old English or smooth, as illustrated.

A COMPLETE LINE OF GENUINE LEADCLAD AND APEX GALVANIZED ROOFING MATERIALS

LEADCLAD

MADE IN GLENDALE SINCE 1912

REG. U.S. PAT. OFF.

TILES SHINGLES CORRUGATED V CRIMP ROLL STANDING SEAM CONDUCTORS EAVESTROUGH VALLEYS

ALSO APEX HEAVY GALVANIZED

See our Catalog in Sweets pages B1717-1728

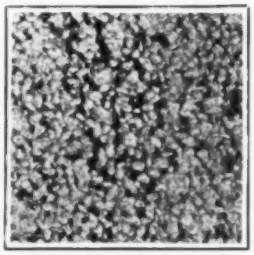
Leadclad Stocks in the Following Cities:

Boston, Mass.
Bridgeport, Conn.
New York City
Erie, Pa.
Cleveland, Ohio
Cincinnati, Ohio
Mansfield, Ohio
Youngstown, Ohio
Toledo, Ohio
Detroit, Mich.
Richmond, Va.
Los Angeles, Calif.
San Francisco, Calif.
Portland, Oregon
Baltimore, Md.
Norristown, Pa.
Tacoma, Wash.
Medford, Ore.

AN AKOUSTOLITH INSTALLATION

NEW ATHLETIC BUILDING
HARVARD UNIVERSITY
Cambridge, Mass.

Coolidge, Shepley, Bulfinch & Abbott
Architects



MAGNIFIED PHOTOGRAPH
OF PLASTER TEXTURE,
SHOWING POROSITY

THE ceiling over both pools is finished with AKOUSTOLITH Plaster, which eliminates excess reverberation and prevents ceiling condensation.

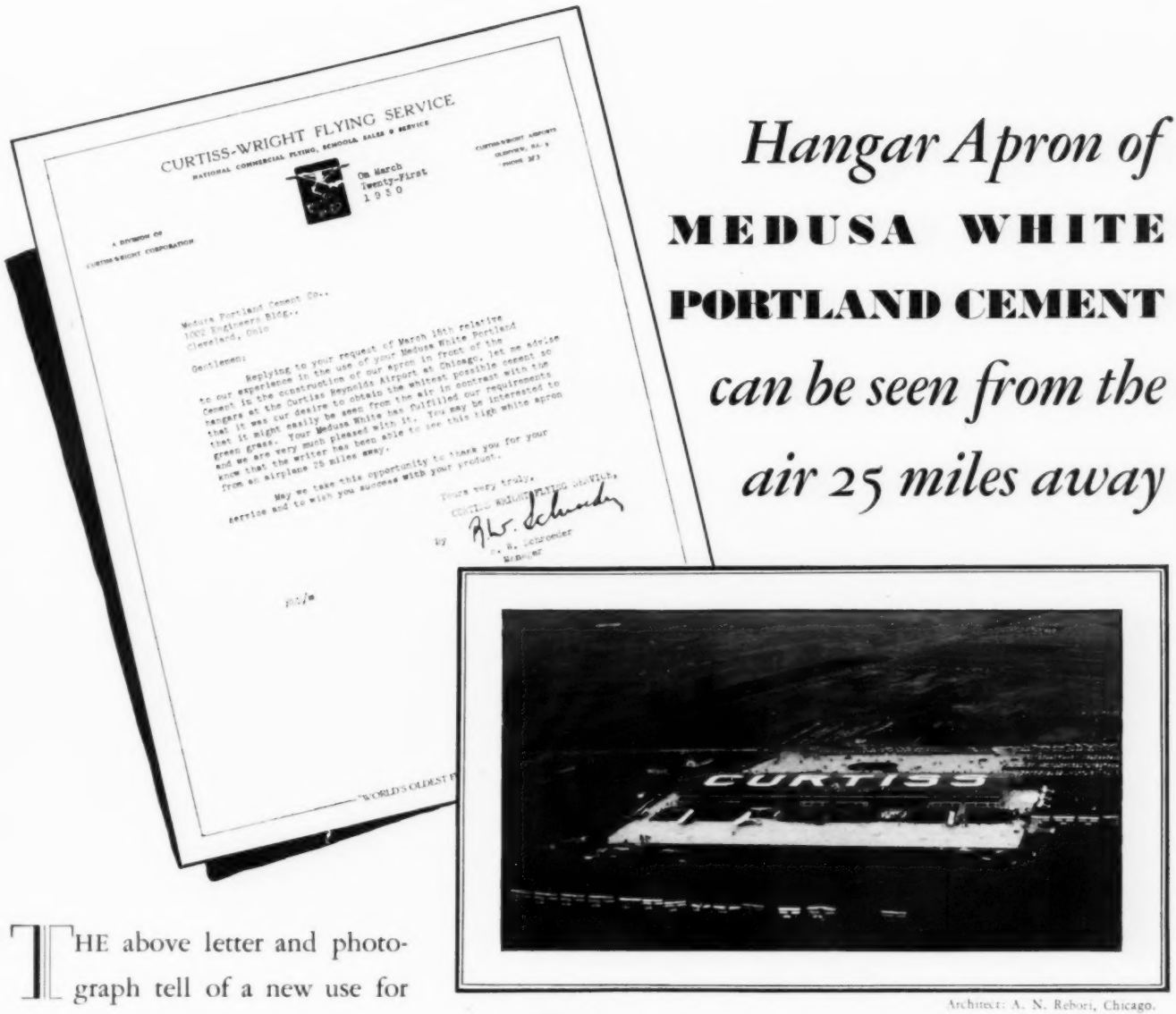
AKOUSTOLITH, available in either tile or plaster form, is the most efficient sound-absorbing masonry material and the ONLY material of high sound-absorbing efficiency which is fireproof and in no way injured by moisture.

Complete Catalogue in Sweet's.

R · Guastavino Company

40 COURT STREET, BOSTON, MASS. 225 WEST 34th STREET, NEW YORK, N. Y.

R. GUASTAVINO CO. OF CANADA, Ltd.—New Birks Building, Montreal, P. Q.


CURTISS-WRIGHT FLYING SERVICE
NATIONAL COMMERCIAL FLYING, SCHOOLS, SALES & SERVICE
On March
Twenty-First
1930
Medusa Portland Cement Co.,
1002 Engineers Bldg.,
Cleveland, Ohio
Gentlemen:
Replying to your request of March 18th relative
to our experience in the use of our apron in front of the
Cement is the construction of our apron in front of the
hangars at the Curtiss Reynolds Airport at Chicago, let me advise
that it was our desire to obtain the whitest possible cement so
that it might easily be seen from the air in contrast with the
green grass. Your Medusa White has fulfilled our requirements
and we are very much pleased with it. You may be interested to
know that the writer has been able to see this high white apron
from an airplane 25 miles away.
May we take this opportunity to thank you for your
service and to wish you success with your product.
Yours very truly,
By
W. Schroeder
Manager
"WORLD'S OLDEST
CURTISS

Hangar Apron of MEDUSA WHITE PORTLAND CEMENT *can be seen from the air 25 miles away*

Architect: A. N. Rebori, Chicago.

THE above letter and photograph tell of a new use for Medusa White Portland Cement. At the Curtiss Reynolds Airport, Chicago, Illinois, Medusa White was specified primarily because of the excellent visibility of the beautiful permanent white surface it gives.

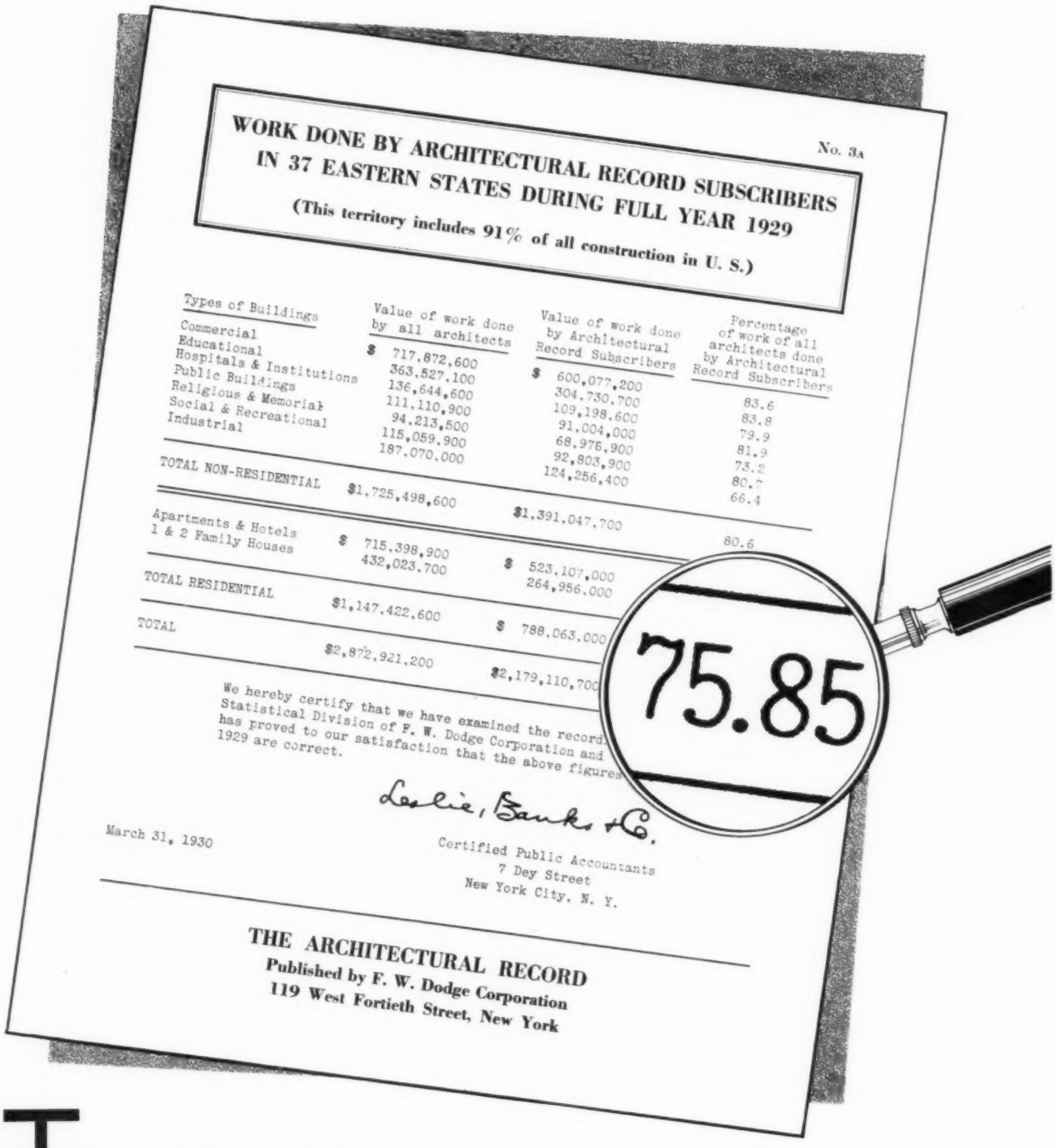
Whether you are designing an airplane hangar, public building or home, Medusa White, plain or waterproofed, will give you a distinctive, permanent and beautiful white finish that sets the construction apart as unusual and individual. Specify this cement for setting and backing up marble, granite and stone work, also for laying brick with non-staining mortar, white or tinted stucco.

Let us send you a copy of the Medusa White Portland Cement Book giving the many uses and specifications.

MEDUSA PORTLAND CEMENT COMPANY
1002 ENGINEERS BUILDING CLEVELAND, OHIO

Manufacturer of Medusa Gray Portland Cement (Plain and Waterproofed); Medusa Waterproofing (Powder or Paste); Medusa White Portland Cement (Plain and Waterproofed); Medusa Portland Cement Paint and Medusa-Mix, the Masonry Cement

MEDUSA



No. 3A

WORK DONE BY ARCHITECTURAL RECORD SUBSCRIBERS IN 37 EASTERN STATES DURING FULL YEAR 1929

(This territory includes 91% of all construction in U. S.)

Types of Buildings	Value of work done by all architects	Value of work done by Architectural Record Subscribers	Percentage of work of all architects done by Architectural Record Subscribers
Commercial	$ 717,872,600	$ 600,077,200	83.6
Educational	363,527,100	304,730,700	83.8
Hospitals & Institutions	136,644,600	109,198,600	79.9
Public Buildings	111,110,900	91,004,000	81.9
Religious & Memorial	94,213,500	68,976,900	73.2
Social & Recreational	115,059,900	92,803,900	80.7
Industrial	187,070,000	124,256,400	66.4
TOTAL NON-RESIDENTIAL	$1,725,498,600	$1,391,047,700	80.6
Apartments & Hotels	$ 715,398,900	$ 523,107,000	
1 & 2 Family Houses	432,023,700	264,956,000	
TOTAL RESIDENTIAL	$1,147,422,600	$ 788,063,000	
TOTAL	$2,872,921,200	$2,179,110,700	

We hereby certify that we have examined the record
Statistical Division of F. W. Dodge Corporation and
has proved to our satisfaction that the above figures
1929 are correct.

Leslie, Banks & Co.

March 31, 1930

Certified Public Accountants
7 Dey Street
New York City, N. Y.

THE ARCHITECTURAL RECORD
Published by F. W. Dodge Corporation
119 West Fortieth Street, New York

75.85

TO REPEAT - - -

more than SEVENTY-FIVE PER CENT of the work done by all architects, was done by subscribers to THE ARCHITECTURAL RECORD—a Dodge publication—119 West Fortieth Street, New York. Member A. B. C. and A. B. P., Inc.

P.S. The end figure under the magnifying glass above—75.85—is a reflection of the Record's consistent subscription-sales policy of building up circulation among the architects who have major specifying power. This tremendous massed buying influence of Record subscribers is not due to luck or accident, but is the result of years of painstaking and deliberate effort.

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RESIDENCE AT FIELDSTON · N · Y · DWIGHT JAMES BAUM · *Architect*

INTERNATIONAL Metal Casements constitute an important detail in the architectural harmony of this charming residence. The new International SCREENED CASEMENTS are available equipped with special bronze hardware that permits the casement to be opened and closed without removing the screen.

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JAMESTOWN · : · NEW YORK
AGENTS IN PRINCIPAL CITIES

Robert F. Smallwood

ROBERT F. SMALLWOOD, Columbia University School of Architecture, 1911, sees an opportunity for the architect in the specialized designing of buildings for growing wholesale and retail establishments.

"Many such firms," he says, "need more space to accommodate their increasing business, and bring them in closer contact with their retail trade. They occupy, very often, antiquated quarters in an old, congested portion of the city, where their customers have difficulty in reaching their show rooms due to long journeys through crowded streets. Identity of such a firm is submerged if it moves into a portion of a modern office or loft building. Such a move only partially solves the traffic problem, and is apt to interfere with inter-departmental communication as the space occupied is not designed to meet the particular needs of the business."

Mr. Smallwood cites a recent commission of his own to illustrate the point, the mercantile building, shown at the left, he has just done for Johnson and Faulkner, Inc., a 107 year old firm, importers of draperies and tapestries. This interesting structure, on 53rd Street, New York City, was built by The Bethlehem Engineering Company. Administrative offices occupy the three top floors. Display and sales rooms are on the street and second floors. A specially equipped drive entrance for receiving and shipping is provided. Main stock room, on the eighth floor, feeds through the intermediate floors to the third floor shipping department by means of a system of gravity conveyors. Telephones and compressed air tubes are so arranged that all departments can function as a coordinated unit.

• DODGE REPORTS •

119 WEST 40th STREET, NEW YORK

likes DODGE SERVICE

ROBERT F. SMALLWOOD
ARCHITECT
503 FIFTH AVENUE, NEW YORK

March 28, 1930

F. W. Dodge Corporation
119 West 40th Street
New York City

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You have asked me why I am friendly to your organization and why we give such information, as may be consistently released, regarding the jobs on our drafting boards, to Dodge reporters This is an unusual question but an easy one to answer

In the first place, if Dodge has detailed information about our jobs, many persons will secure it from you rather than telephoning, writing or calling upon us This saves time

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Finally, Dodge provides us with Sweet's Catalogues which simplify our filing problem and make needed data easily available

Very truly yours,

VV/FK

Robert F. Smallwood

After graduation, Mr. Smallwood gained his experience in several leading architectural firms of New York City, and through an association that resulted, he handled twelve fire stations in the city.

His further efforts took him into a varied field of architectural design, including the winter estate of Dr. Earle S. Sloan, in North Carolina, together with several college buildings, a hotel, a women's club building, and several institutional buildings for the state of North Carolina.

Being attracted to Florida development he located at Clearwater, where his activities included the Fort Harrison Hotel, a shore development for the Biltmore Hotel, at Belleaire, the grounds and buildings of the West Coast Jockey Club, at Tampa, and the design for the layout of several important sub-divisions including Biltmore Shores, Tampa, Glenwood Estates, Clearwater, Belleview Terrace, Duneden, together with some 30 odd residences.

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The only magazine edited *specifically* for building contractors of the professional type, those who work from architects' and engineers' plans and do the purchasing for 4¼ billion dollars' worth of building annually . . . Devoted exclusively to the interests of these important buyers, General Building Contractor offers manufacturers — and their advertising agencies their *first* opportunity of reaching this concentration of purchasing power without waste circulation . . . Its record coverage of general building contractors doing individual projects of $50,000 and over sets a new high mark for magazines in the field of building construction.

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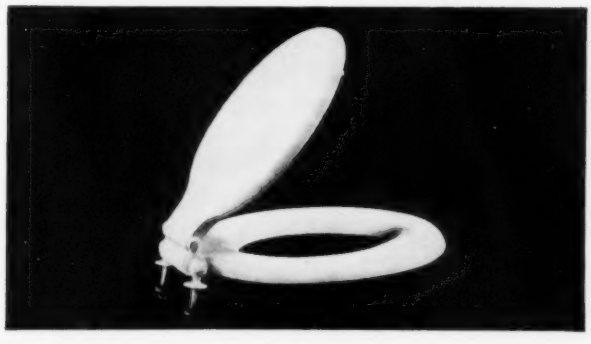

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Latrobe Electric Steel Co.
Liquid Carbonic Co.
Nichols Copper Co.
Oakbrook Hosiery Mills Inc.
Oakland Motor Car Co.
Olds Motor Car Co.
Packard Motor Co.
Pennsylvania Light & Power Co.
Pennsylvania Railroad
Robert Buyer Corporation
Rossman Corporation
Timken Roller Bearing Co.
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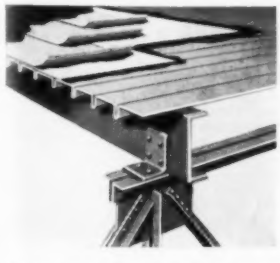
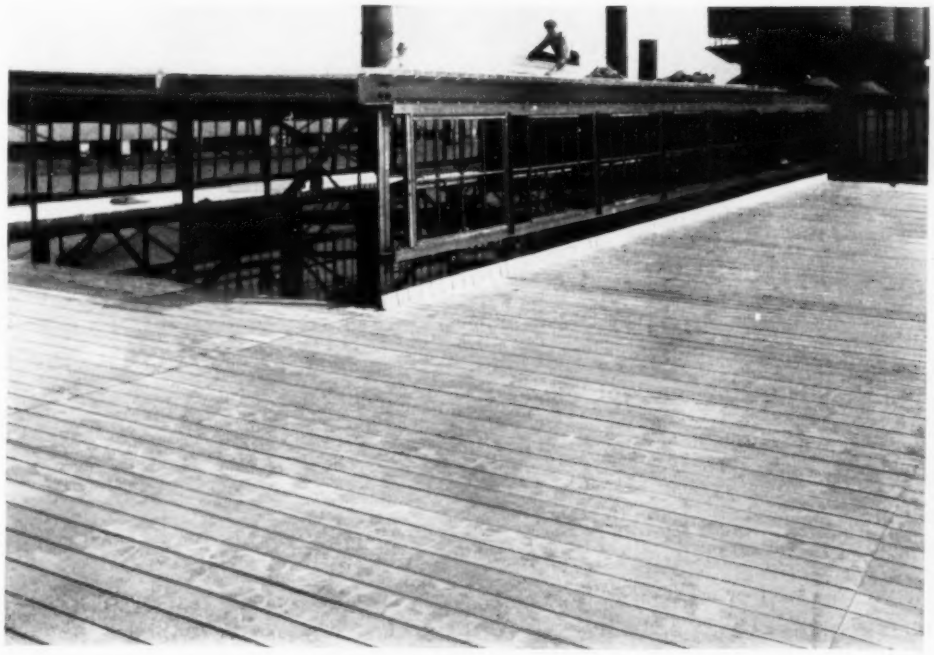
Below is a cross section of Mahon Steel Roof Deck showing application of insulation and roofing material.



Mahon Steel Roof Deck, manufactured from special tight coated galvanized copper bearing steel, requires no painting or maintenance whatsoever . . . it provides a smooth rigid surface for the application of insulation and roofing material.



Mahon Steel Roof Deck installed on a new plant for the Latrobe Electric Steel Company, Latrobe, Pa.

THE broad acceptance of Mahon Steel Roof Deck among the outstanding industrials of the country is significant of two things: First, that Mahon Steel Roof Deck is thoroughly practical in every respect . . . and that the ease of installation, and the principle of load distribution through lateral continuity, has gained for it a decided preference among architects and builders; Second, that architects, builders and manufacturers are availing themselves of the economies and the firesafety and permanence provided by this modern type of roof. Mahon Steel Roof Deck is less than half the weight of the lightest roof in other types of permanent, firesafe construction. It is rolled from special tight coated galvanized copper bearing steel . . . it will not disintegrate, and it requires no painting or maintenance whatsoever. In buildings designed to carry this extremely light roof load, savings amounting to as much as 25% can be effected in the supporting steel alone. Let us show you the economies and the structural advantages of Mahon Steel Roof Deck. Write for our complete data book and our folder, "Facts and Figures."

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DETROIT, MICHIGAN
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Manufactured in Galvanized Copper Bearing Steel in either 18 or 20 Gauge

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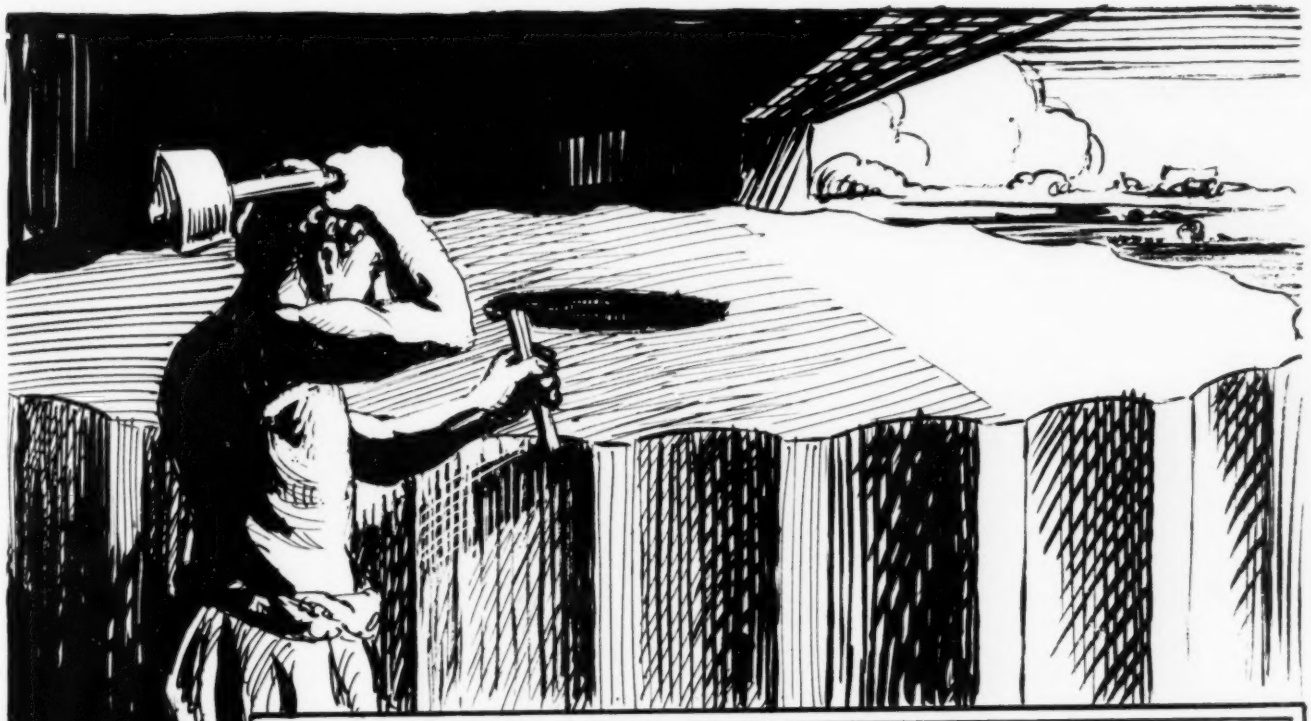

IKTINOΣ

"OUR temple to the Virgin Goddess" said Iktinos, "shall be of pure and spotless Pentelic marble." Iktinos had his choice of materials when he built the Parthenon—he chose a stone whose uniformity was its strongest recommendation for the job in hand—a building stone that showed no spotty variations in tint and tone and color to camouflage structural lines and offsets, kill carving detail, and reduce the effectiveness of sweeping vertical and horizontal lines. Were Iktinos alive today, he would choose Victor Select and Standard Buff Limestone for many of his jobs for the same reason—because its warm, creamy lightness is ABSOLUTELY uniform and admirably adapted to the architectural mode of the moment.

Represented in the new 4-volume Sweet's for 1930, Vol. A, page 453.

VICTOR OOLITIC STONE CO.

Bloomington, Indiana

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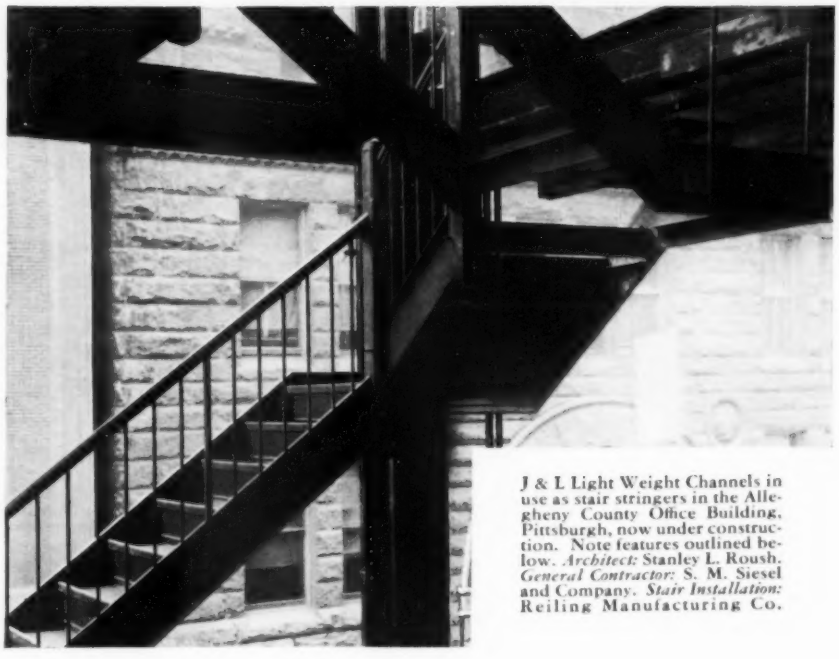
for STAIR STRINGERS AND OTHER USES

now available in 2 sizes and 3 weights

J & L Light Weight Rolled Channels, the economies and advantages of which as stair stringers have been demonstrated in many important installations during the last two years, are now available in two sizes, **10-inch in two weights, 8 lb. and 8.8 lbs., and 12-inch in one weight, 10.6 lbs.** The properties of these sections suggest that further familiarity on the part of architects, engineers and fabricators will develop many new and important uses for them.



J & L Light Weight Channels in use as stair stringers in the Allegheny County Office Building, Pittsburgh, now under construction. Note features outlined below. *Architect:* Stanley L. Roush. *General Contractor:* S. M. Siesel and Company. *Stair Installation:* Reiling Manufacturing Co.

5 Distinctive Advantages

1. SAVING IN WEIGHT.

J & L Light Weight Channels are approximately one-half the weight of the lightest standard rolled channels of equal depth, and offer greater strength than formed plates of equal weight.

2. EASE OF FABRICATION.

J & L Light Weight Channels are ready, as received, for fabrication, which may be accomplished quickly with a minimum of shop equipment at lowest cost.

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Light weight, accurate dimensions, straight lines and square corners of J & L Light Weight Channels make for easy handling and speedy installation wherever they are used.

J&L LIGHT-WEIGHT CHANNELS

4. FINISHED APPEARANCE.

No rounded corners; straight, true lines and proper fitting at joints result in a finished job of unusually attractive appearance.

5. SCHOOLS AND PUBLIC BUILDINGS.

J&L STEEL

The 12-inch J & L Light Weight Channels are especially adapted to stair construction in schools and other buildings where a broad tread is required.

JONES & LAUGHLIN STEEL CORPORATION

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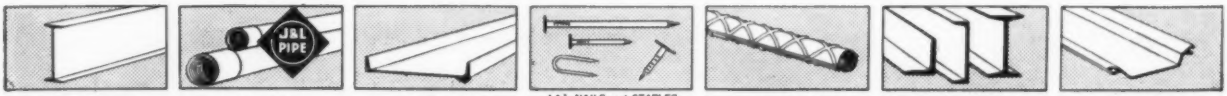
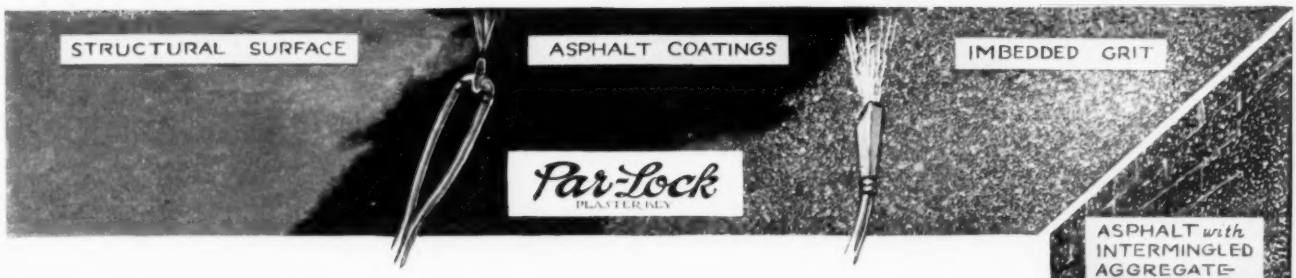


J&L JUNIOR BEAMS | J&L STEEL PIPE | J&L LIGHT CHANNELS | J&L NAILS and STAPLES BRIGHT and GALVANIZED | J&L CONCRETE BARS | J&L STRUCTURAL STEEL | J&L STEEL PILING



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Dens-tect, which includes a fine aggregate mixed at the nozzle, is a wall treatment of marked efficiency —built out to tangible thickness and especially dependable for the interior treatment of exterior walls.

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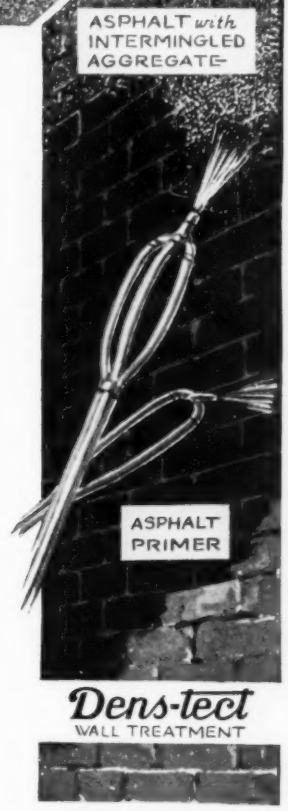

Dens-tect
WALL TREATMENT

Par-Lock Appliers

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ATLANTA,
Bona Allen Building
BALTIMORE,
613 West Cross Street
BUFFALO,
958 Ellicott Square Bldg.
CHARLOTTE,
217 Builders Ex. Bldg.
CHICAGO,
862 Builders Building
CINCINNATI,
611 Dixie Terminal Bldg.
CLEVELAND,
218 Hunkin-Conkey Bldg.
COLUMBUS,
751 South Cassingham Rd.
DETROIT,
2457 First National Bldg.
KANSAS CITY,
2035 East 19th Street
MINNEAPOLIS,
434 Builders Exchange
NEWARK, N. J.,
24 Commerce Street
NEW YORK CITY,
50 Church Street
PHILADELPHIA,
1700 Walnut Street
PITTSBURGH,
207 Fulton Building
SCRANTON,
Cedar Avenue
ST. LOUIS,
1514 Chemical Building
TORONTO,
2258a Bloor Street, West
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The complete lighting of this outstanding structure was designed and executed by PEARLMAN and includes one of the largest lighting fixtures in this country.

All of our facilities are available to the architectural profession for research and consultation. Ask us to send you our series of Lighting Studies in plate form as they appear —no obligation of course. » » »

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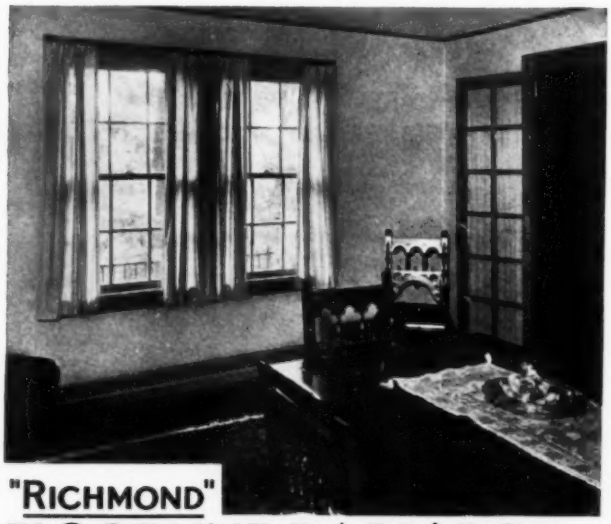

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U. S. PATENT APPLIED FOR

In design, adaptability and effectiveness as a heating unit the Floorline radiator is decidedly unlike any other.

A long low radiator projecting heat over an extended length from the floor level. Does away with cold floors, cold corners.

Attached to the baseboard, fully exposed, it is but 8½ inches high, 3½ inches deep. Painted to match the base trim, it is indeed unnoticeable and offers no obstruction to furniture placement. When preferred, it may be semi-recessed or completely concealed behind a grille.

The Floorline radiator may be attached to any two-pipe steam, vapor or hot water system. Its efficiencies have been tested and rated by the Carnegie Institute of Technology and the Frost Research Laboratories according to the code of the American Society of Heating and Ventilating Engineers. Mail the coupon now for catalog showing installation drawings, ratings and complete details.

Illustrating valve and trap connection

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Incorporated
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You may send me illustrated descriptive booklet of the Richmond Floorline Radiator.

Name .....

Address .....

City ..... *State* .....

In order that we may send the most helpful information, please check the space that identifies you:

☐ **Architect** ☐ **Builder** ☐ **Heating Contractor** ☐ **Owner**

"Linc-Weld" Superiority is due to:

1. Larger Shafts
2. Larger Bearings
3. Better Insulation
4. Stronger Frame (Steel)
5. Greater Overload Capacity

"Here, Lad—

This *'Linc-Weld'* motor selection business has got to be settled pretty soon.

For too long it's been a bone of contention with us."

"Yes, Pop—

and like Napoleon, let's take the bone apart to analyze it.

Forget motors for a moment and see what we need.

One of our clients last year had a case of motor frame breakage.

The *'Linc-Weld'* steel frame will eliminate that.

Some others had bearing troubles and *'Linc-Weld'* double size shafts and bearings will settle that.

Another has had motor trouble due to overload and *'Linc-Weld'* has the greatest overload capacity.

Now where's the bone?

It's just about as visible as the one Mother Hubbard didn't see."

THE LINCOLN ELECTRIC COMPANY
Department No. 30–6, CLEVELAND, OHIO

M-67

LINCOLN
"LINC-WELD" MOTORS

New Architectural Honors

First Church of Christ Scientist, Fillmore, Calif. Honorable Mention, Christian Herald, 2nd Annual Church Competition. Honorable Award, Southern California Chapter, A.I.A.

Last year H. Roy Kelly, the architect of this church, won the House Beautiful National Competition with a house in Pasadena. For both the best possible materials were specified.

On the prize house Mr. Kelly used Cabot's Creosote Stained Shingles, on the church, Cabot's hand-split Shakes stained with softly blended Cabot's Stains—the most beautiful, durable, and economical stains he could find.

Let us send you our free Stain Book and Color Card.

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AR-6-30

"More than a Panelboard —*A Service as Well*"

You receive in FA Panelboards all that the science of engineering and the guidance of practical experience can build into a panelboard. Each is a thoroughly standardized product in every particular both in itself and with the steel cabinet. They are safe and long lasting in service without maintenance.

That is only half the story. The FA Sales Organization, available in principal cities from coast to coast, are experienced in modern wiring plans and will help you in bettering the electrical job.

Talk to your local FA man. Learn of his practical help by writing or 'phoning today—we consider it our obligation to aid you to effective panelboard and switchboard installation.

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Compressed Concrete Piles for National Tube Co., McKeesport, Pa.

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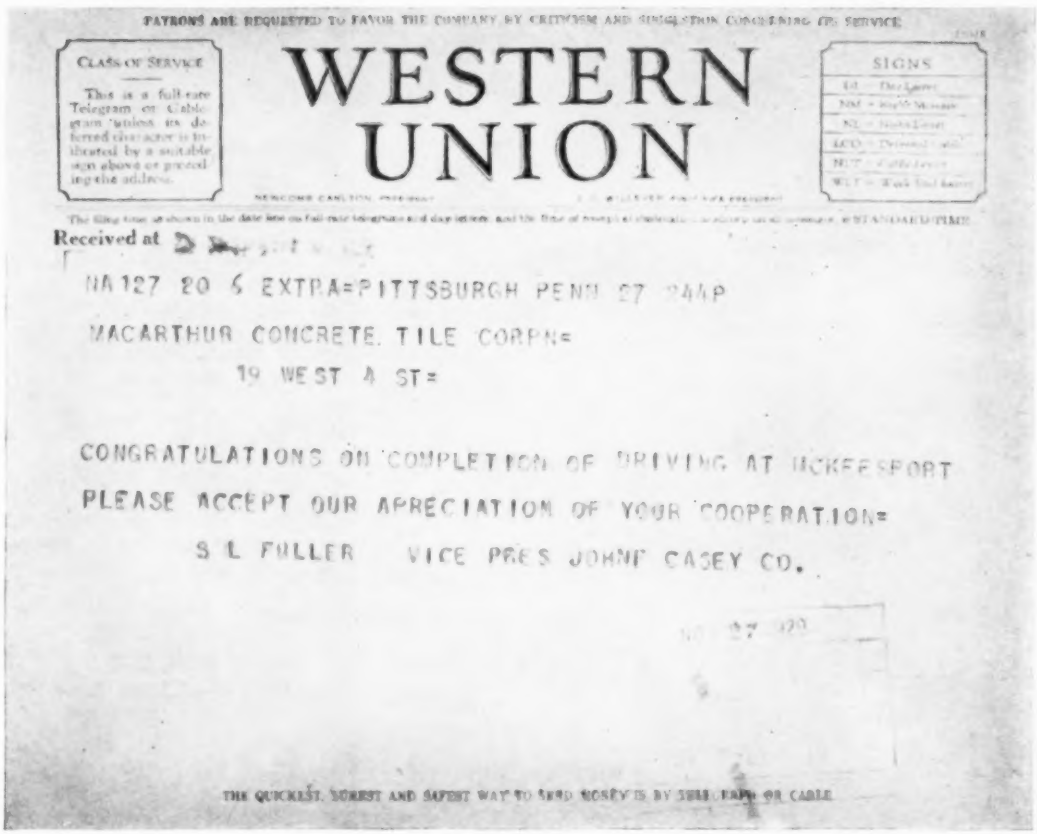

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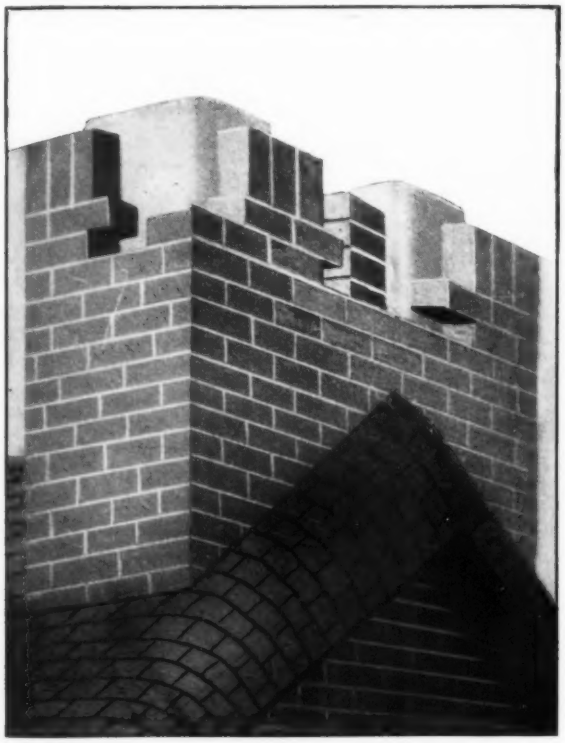
Giles Drilling Corporation (an affiliated company) will welcome the opportunity to submit estimates on core borings or soundings of any description



No fire can get a foothold in a chimney lined with fire clay flue lining

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FIRE CLAY
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Satisfactory Wood Floors Over Concrete Through the Bull Dog Method

STEP FOUR—LEVELING UP. *Before nailing, necessary leveling with straight edge is quickly accomplished. Joints come within clips and both ends are nailed.*

THE Bull Dog Method and process of anchoring wood floors over concrete provides a level wood floor that will be permanently satisfactory—and free from buckle and dome.

In addition, Bull Dog Floor Clips ***eliminate dry rot,*** doubling floor life; reduce dead load 18,000 lbs. to 1,000 square feet of slab area; save construction time because there's no fill to dry, no beveling or shimming, and sleepers and finished floor are laid at one time. The Junior Clip (⅝" wide) may be used with or without a fill (dependent on the service duty of the floor.) When a fill between the sleepers is desired, any cheap, inexpensive mix such as sand, cinders or cinder concrete can be used.

Millions of BULL DOG FLOOR CLIPS on over 8,000 jobs carry testimony of satisfaction. Made for 2, 3 and 4 inch sleepers. Regular and Junior Styles. Friction tight nailing facilities (nails gratis.) Write for catalog and samples.

THE BULL DOG FLOOR CLIP CO.
108 N. First Ave., Winterset, Ia.
135 Representatives—15 Warehouse Stocks

BULL DOG Floor Clips

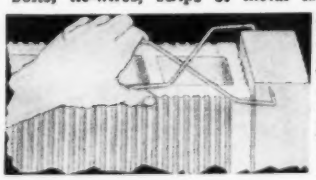
REGULAR CLIP—*3 sizes, 2, 3 and 4 in. 20 gauge galvanized iron.*

Original Patent granted June 14, 1921
Reissue Patent granted June 29, 1924
Process Patent granted May 19, 1925

JUNIOR CLIP—*3 sizes, 2, 3 and 4 in. 18 gauge galvanized iron.*

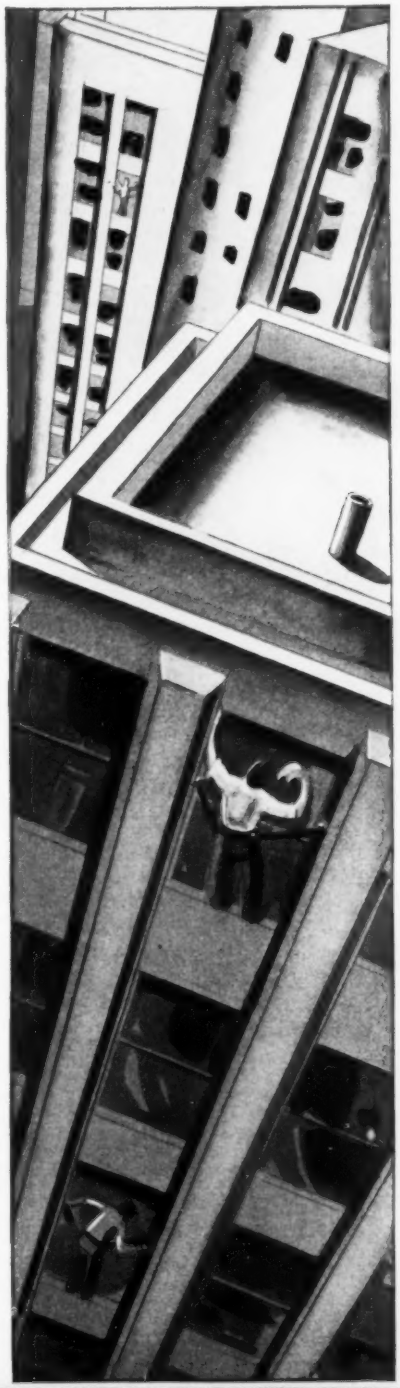
The Bull Dog Buck Anchor

THE Bull Dog Buck Anchor forms a rigid truss in the mortar joint which prevents the movement of the buck in any direction. It eliminates the use of nails, screws, bolts, tie-wires, strips of metal lath and iron, and all pounding against the back sides of the buck. Made in three widths of No. 10 Galvanized Steel Wire: 3 in., 4 in., 6 in. Ten per cent of anchors in packing cases are shorts to take care of spaces too short for the regular size anchor.



Windows are INSTALLED Once — They are CLEANED Hundreds of times

The cost of windows to the owner of a building merely begins with their installation. They must be cleaned frequently during the life of the building. The cost of cleaning windows over a period of years doubles, trebles, and redoubles again and again the initial cost. For that reason, the installation of Williams Reversible Window Equipment which makes possible inside cleaning—at a 50% reduction in cleaning costs—means a remarkable saving to the owner of the building.



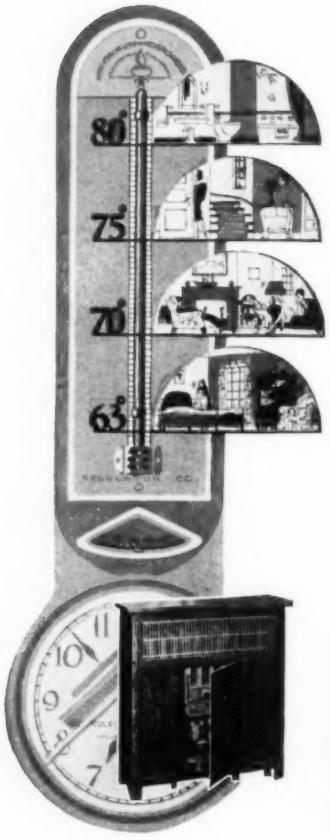
The Williams Pivot Sash Company

East 37th St. at Perkins Ave.
Cleveland · Ohio

For 26 years manufacturers and installers of Reversible Window Equipment

WILLIAMS REVERSIBLE WINDOW EQUIPMENT

Clean Your Windows from the Inside



Sensible temperature

NOW each room in the home can be heated at any desired temperature. 80 degrees for the bathroom; 75 degrees for the nursery; 70 degrees for the living room; 63 degrees for the unused bedroom. Sensible temperature.

The Duplex Unit Control Gas Heating System sets the pace for comfortable, sensible, economical home heating. How often have you wished for just such a system to satisfy the demands of your clients?

Send for A. I. A. File

Mr. Architect and Heating and Ventilating Engineer, you should learn all the facts concerning the Duplex Unit Control Gas Heating System. For your especial benefit we have prepared all the facts and bound them in a file folder for convienence in reference. A copy will post you on the latest development in scientific home heating. Send for it.

DUPLEX UNIT CONTROL GAS HEATING SYSTEM

ROBERTS-GORDON APPLIANCE CORPORATION

DELAWARE AVENUE AT TUPPER STREET

CURTISS BUILDING BUFFALO, N. Y.

Who wants to "do dishes"

When a movie's calling?

The many temptations that are attracting thousands of families from their homes immediately after the evening meal are bringing a growing demand for kitchens equipped with electric dishwashers.

CONOVER Electric DISHWASHER SINK

Meets the latest demands for efficiently equipped kitchens

You can greatly increase the sales and renting possibilities of houses and apartment buildings by specifying this latest approved kitchen equipment. Tested and approved by Good Housekeeping Institute, Delineator Home Institute, Priscilla Proving Plant.

The *CONOVER Electric Dishwasher Sink* requires no special roughing in, no specially low trap, and is interchangeable with the regular kitchen sink; therefore, ideal for old as well as new buildings. Requires space of only 25 x 42½ inches. Rubber plated dishracks; large flexible capacity; sliding drainboard top; self cleansing, and other exclusive features.

***The Sink Model CONOVER* is sold exclusively through the Plumbers' Trade. Portable *CONOVERS* are sold only through the Electrical Trade.**

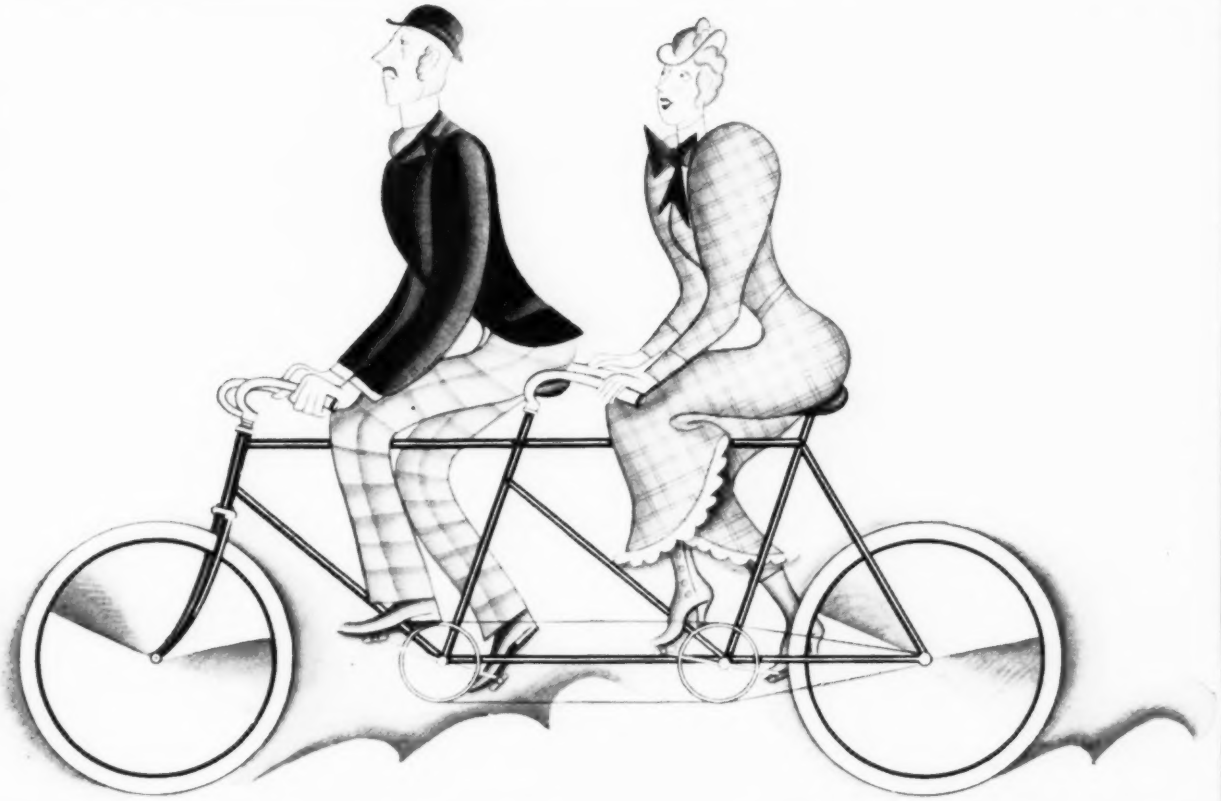
Write for folder "The Kitchen of Tomorrow" and full facts about either Sink or Portable Model CONOVER.

THE CONOVER COMPANY

Dept. R-6 140 SO. DEARBORN ST., CHICAGO

District Offices:

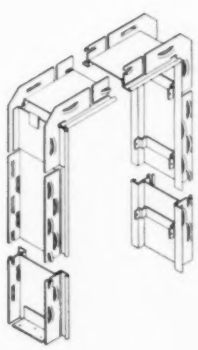
101 Park Ave. (Architects Bldg.), New York; 1700 Walnut St., Philadelphia; 115 Chauncy St., Boston



Who Would Have Thought It!

Little did our fathers realize the tremendous improvements in construction methods that a few years would bring. Kalman Steel Buck, and Jamb and Buck offer construction advantages far in advance of any other door frames. Here are 7 of the 15 advantages:

1. **Replace wood bucks with heavy steel members.**
4. **Provide steel grounds, terminals, and positive attachment for plaster.**
5. **Overlap and closely engage the sides of the tile and interlock with the wall structure.**
6. **Make standing trim unnecessary.**
9. **Make possible inspection of the tile setting after wall is constructed.**
10. **Permit the inspection of wall anchors after they are in place.**
15. **Eliminate plaster cracks by providing surfaces to which plaster naturally adheres.**



Greater beauty of line is obtained by the use of Kalman Steel Buck, or Jamb and Buck. Form truly follows function. May we send you photographs showing important hotels, apartments, public buildings, or private homes where Kalman steel door frames are used?

KALMAN
STEEL COMPANY

Atlanta · Baltimore · Boston · Buffalo · Charlotte · Chicago
Cleveland · Columbus · Dallas · Dayton · Detroit · Houston
Milwaukee · Minneapolis · Newark · New Haven · New York
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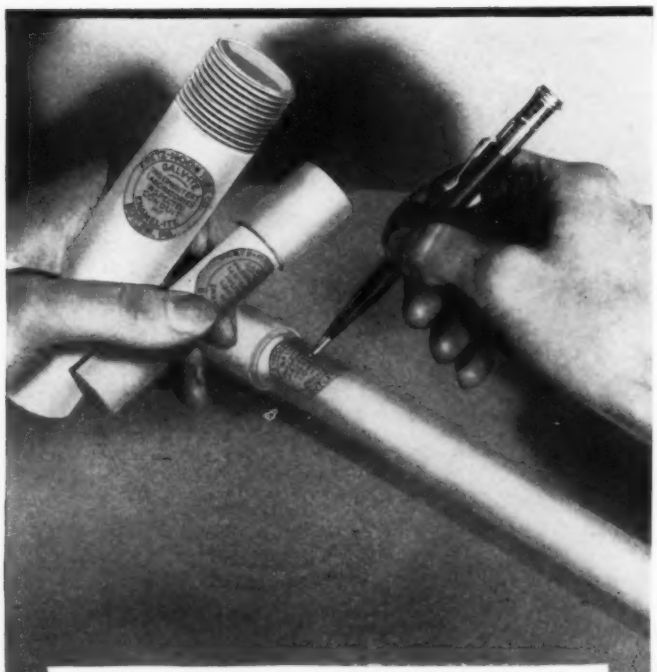
METAL LATH · FURRING *and* LATHING PRODUCTS · HOME BUILDING PRODUCTS · STEEL DOOR FRAMES
STEEL JOISTS *and* ACCESSORIES · REINFORCING STEEL *and* CONCRETE ACCESSORIES · ROAD PRODUCTS

Fretz-Moon



The Little Label That Means So Much—

WITHIN the steel wall of conduit runs the vital force that makes the modern building a possibility.

The black and orange Fretz-Moon Label is your assurance of uniformly strong conduit, perfect welds, and threads so clean that installation schedules are expedited on every job.

Specify by the trade names—Enamelite or Galvite—and look for the little label that means so much.

FRETZ-MOON TUBE COMPANY, Inc.
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RIGID CONDUIT

Trouble-Free

ONE PIECE DESIGN

Quietness and Low Cost

SO QUIET you can scarcely hear its powerful flushing action. That's why the T/N is for *any* bathroom . . . large or small.

No unsightly wall tank . . . you can put the T/N under a window, in a corner, or under a stairway. Tank and bowl are combined in one beautiful piece of highest-quality, two-fired vitreous china. Only two connections to make . . . a roughing minimum of 12 inches.

No danger of water contamination . . . the T/N's patented ball-cock vent permits no water to feed back into the supply line. The T/N is non-overflowing.

Water surface is unusually large and correctly located. And best of all, the T/N is moderate in cost. Can be had in color if desired. See it at the Architect's Building, 101 Park Avenue, New York City. Or write for complete filing data.

ONE PIECE WATER CLOSET SILENT NON OVERFLOW
Patented, Pat. Pend.

W. A. CASE & SON MFG. CO.
Established 1853
Dept. 1406, 220 Delaware Avenue, Buffalo, New York

T/N

ONE PIECE WATER CLOSET

Dedicated to coming generations
Telephone companies have to be far-sighted. Their completely equipped buildings must serve coming generations, and be a source of pride to the community. So the Syracuse headquarters building of the New York Telephone Company, designed by Voorhees, Gmelin and Walker, Architects, of New York City, was built of reinforced concrete throughout. As pictured above, the beautiful exterior is of cast stone in which the richness of hand-tooling is combined with the speed and economy of reproduction from models. This practical and fire-safe structure will endure long past the time when its capacity and facilities are adequate for the growing city it serves.
[Informative booklets on concrete construction gladly mailed on request]
PORTLAND CEMENT Association
Concrete for permanence and firesafety
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IF the local representative for Clinton Perforated Metal Grilles has not made himself known, write us and we will have him call upon you.

Local distribution is important. The architect can see samples of stock designs and finishes, discuss scope and limitations of the product and then give his instructions . . . personally.

The Clinton method of manufacturing grilles is of live interest to the architect. Stock dies are used, but their arrangement either as units or in combinations is left for the architect to decide.

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See Sweet's Architectural and Engineering Catalogs for Specifications

WICKWIRE SPENCER STEEL CO.
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Wickwire Spencer Steel Co.
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Send me.....copies of your latest Handbook on grilles.

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When planning big kitchens.....

Utilize the knowledge we have acquired in the planning and operation of kitchens in hotels, restaurants, cafeterias, clubs, and hospitals. Our engineering department will gladly cooperate in the designing of typical layouts, this service obligating the architect in no way whatsoever.

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⟪ *Two-Air-Space* ⟫

Method of Application Means 50% more Effective Insulation . . .

The value of insulation to any home is in direct proportion to the amount of heat leakage it prevents . . . Plaster bases or sheathings do not provide adequate protection from heat and cold nor do they permit the heating plant to deliver full efficiency. This is especially true with automatic heating plants, either oil or gas. The home must be adequately insulated to assure economical operation.

FLAX-LI-NUM with two air spaces actually produces the greatest amount of insulation from an economical thickness of material. It is 50% more effective than a similar layer of insulation used as a plaster base or sheathing. According to the U. S. Bureau of Standards tests, ½ inch of FLAX-LI-NUM applied by this method is equal to more than ¾ of an inch at any other place in the wall.

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Send me complete information about Flax-li-num. Also facts about the "two-air-space" method.

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City ..... State .....

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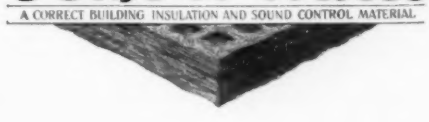
A CORRECT BUILDING INSULATION AND SOUND CONTROL MATERIAL



This Anti-Slip Tread Assures Safety Ahead

WHEREVER "A.W." Diamond Pattern Floor Plate is installed, walking and trucking are safe and secure.

The pattern of "A.W." Floor Plate is composed of oval-shaped, bevel-edged diamonds with rounded tops. The diamonds are spaced and sized to provide ease and comfort under-foot. Because of the oval-shape and beveled edges of the diamonds, feet get a sure, certain grip at all times.

Moreover, slips and falls due to the collection of water or oil on the flooring cannot occur with "A.W." Floor Plate. Water and oil quickly flow off the rounded tops of the diamonds. The pattern is self-draining from every angle.

Let us send you samples of "A.W." Floor Plate, and interesting booklets. Write today.

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CONSHOHOCKEN, PA.

New York
Philadelphia
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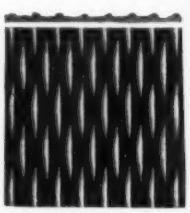
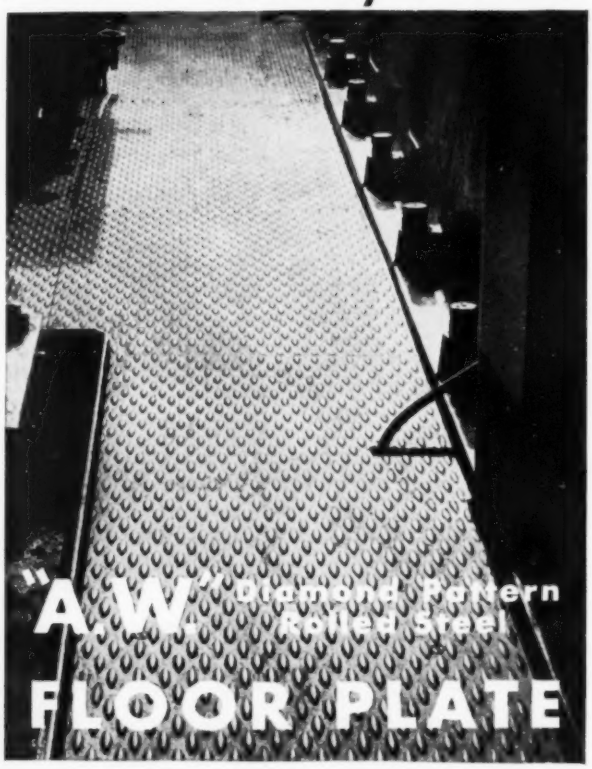
"A.W." Diamond (¼ Size)
Furnished in rolled steel (also in aluminum) and all commercially-rolled metals, in thicknesses of from ⅛" to 1".

"A.W." Diamondette (¼ Size)
Furnished in rolled steel (also in aluminum) and all commercially-rolled metals, in Nos. 16 to 12 Gauges, and in other thicknesses up to ⅜".





Chicago Daily News Uses United Metal Doors

OF exceptional interest to architects because it pioneered the use of air rights in the West, the Chicago Daily News Building is an example of all that is modern and efficient in building construction.

It is a matter of pride to us that approximately three hundred swing doors, as well as dumbwaiters and telephone booths are of United Hollow Metal construction.

The frequency with which United products and United engineering service are associated with projects of this calibre speaks more eloquently than volumes of words of the outstanding excellence of both. Nothing demonstrates more clearly that there is no substitute for experience and no short cut to true craftsmanship.

THE UNITED METAL PRODUCTS CO.
CANTON, OHIO

SEE OUR Catalogue in SWEETS

The Chicago Daily News Building

Contractors:
Hegeman-Harris Company
Architects:
Holabird & Roche

CONFIDENCE

Consistent with public utility methods, the International Telephone & Telegraph Building is of thoroughly sound construction. It is architecturally comparable to its fine neighbors in downtown New York, and will be called on surely to serve long and economically.

As in so many of America's greatest structures the brass pipe selected registers another vote of CONFIDENCE in Bridgeport "Plumrite." Here is a "known quantity" for the modern builder—proving itself again and again—outlasting buildings through upwards of fifty years of service records.

There is no substitute for the test of time—there need never be a substitute for Bridgeport "Plumrite."

All "Bridgeport" Pipe
Is "Plumrite"

To identify mixtures, to protect you, these trade-marks appear every nine inches on all Bridgeport "Plumrite" Pipe.

"Plumrite" Standard
For Good Water Conditions. Known as Muntz metal. Contains 60% Copper and 40% Zinc. Can be bent hot and cold. Very satisfactory. Highly recommended.

"Plumrite" 67%
For Good Water Conditions. Contains 65% to 68% Copper—balance Zinc. Can be bent cold only. Furnished on request.

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For Hot and Cold Salt Water. Contains 70% Copper, 1% Tin, and 29% Zinc. Very satisfactory.

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For Chemically Treated and Acid Polluted Waters. Contains 99.99% Copper.

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Architect: Louis S. Weeks *Engineers:* Clark, MacMullen & Riley *Plumbing Contractor:* Frank B. Lasette

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Insulate with

U. S. MINERAL WOOL

• COLD-PROOF • HEAT-PROOF •

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Cooler Rooms During Summer Heat

THE insulation of your home with U. S. Mineral Wool is an assurance of greater summer comfort.

All rooms, even attic rooms, are many degrees cooler in summer, if protected with this all-mineral, indestructible and vermin-proof material. Placed in the walls and rafters and between floors of a house, U. S. Mineral Wool forms a protective shield through which torrid summer heat or frigid winter cold cannot penetrate. Insulation is a year-round comfort provider and a decided money saver.

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Send coupon for free sample and illustrated booklet.

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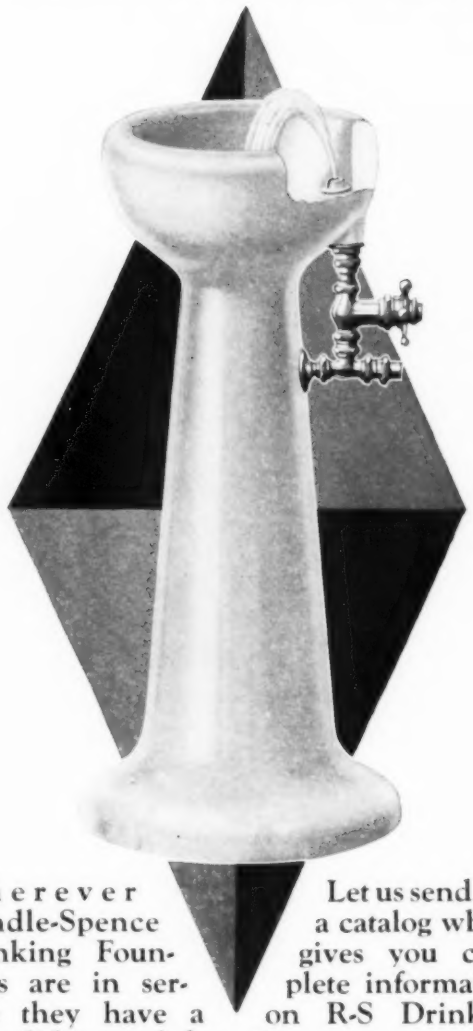
R-S FOUNTAINS



Wherever Rundle-Spence Drinking Fountains are in service they have a splendid record for providing good, clear, refreshing water — free from contamination. Their special design insures a clean drink because lips cannot touch the R-S Nozzle.

Let us send you a catalog which gives you complete information on R-S Drinking Fountains.

R-S N-93 and N-94 fountains can now be had in colors. Write for special bulletin describing "Color" fountains in detail.

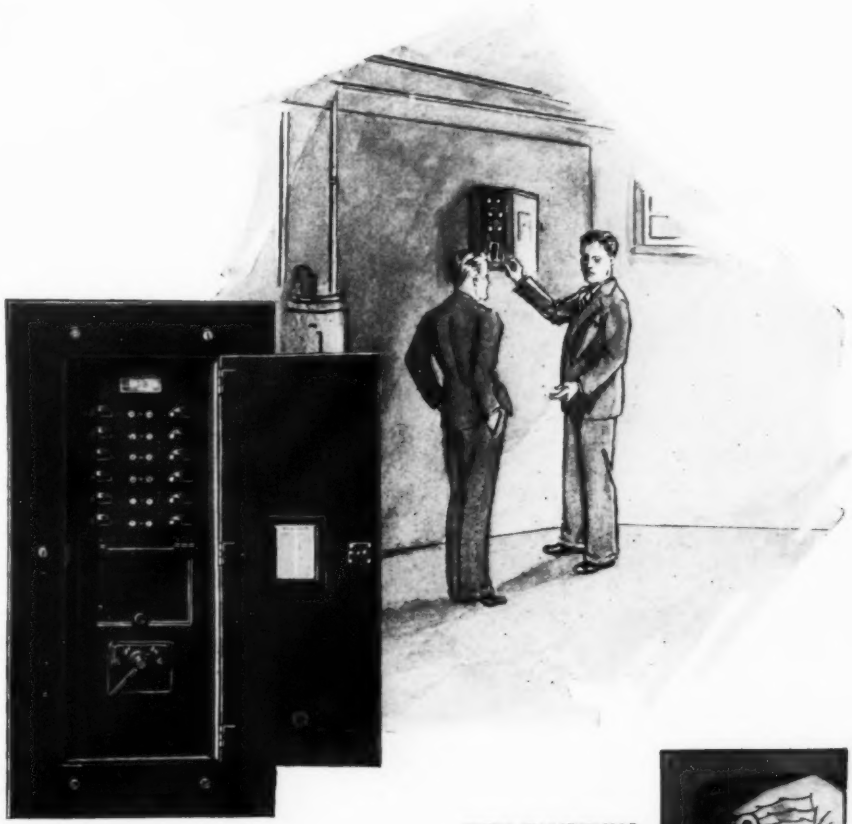
RUNDLE-SPENCE MFG. CO.

70 Fourth Street — Milwaukee, Wis.

NOFUZ PANELBOARDS - - - THE TINKER-PROOF CONTROL

When Tampering Tenants say . . .

"Got a penny"



"HERE'S that blown fuse. Got a penny? I'll fix it." And the "fixer" goes away feeling proud that he has restored the service.

In tampering with the panelboard he tampers with your reputation. The protection to the wiring is destroyed . . . the fire hazard increased. But who knows it . . . until a mysterious fire brings the engines clanging down the street?

Westinghouse Nofuz panelboards reduce fire hazard to a minimum. The circuit breaker which protects the branch circuits cannot be tampered with. It cannot be closed against an abnormal overload or short circuit. Its calibration cannot be altered nor its action blocked. And it is easy to re-close.

Have the Westinghouse panelboard specialist show you a sample breaker. The residences, large buildings and industrial plants you design will have a new fire insurance with this panelboard.

ENDS TAMPERING WITH FUSES

ELIMINATES SERVICE CALLS

Service, prompt and efficient, by a coast-to-coast chain of well-equipped shops

Westinghouse

WESTINGHOUSE ELECTRIC

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Every wood joint
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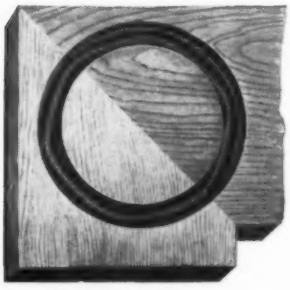

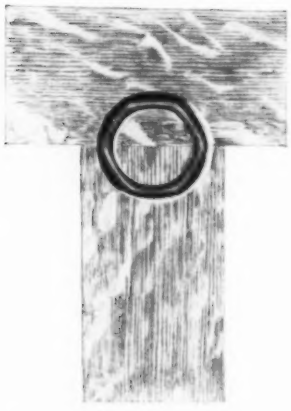

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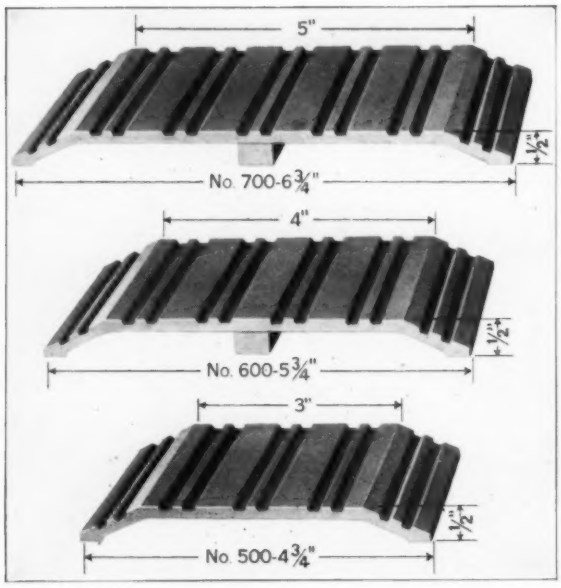

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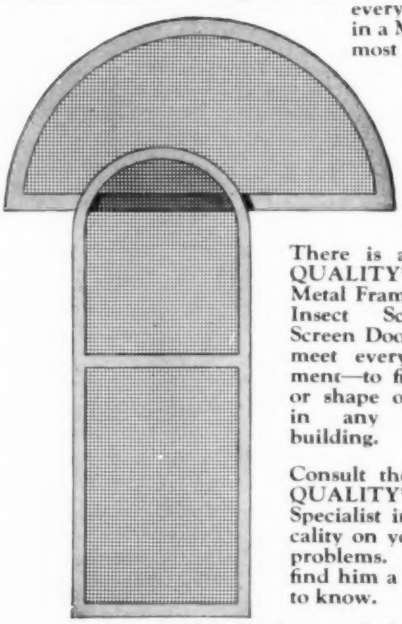

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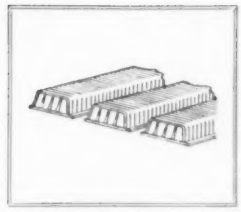

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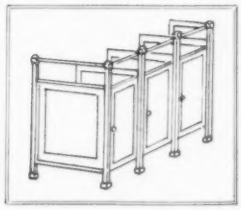

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State of New York, County of New York, ss.: before me, a notary public in and for the State and county aforesaid, personally appeared J. A. Oakley, who, having been duly sworn according to law, deposes and says that he is the Business Manager of THE ARCHITECTURAL RECORD, published by F. W. Dodge Corporation, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

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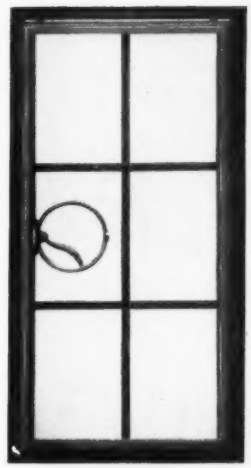

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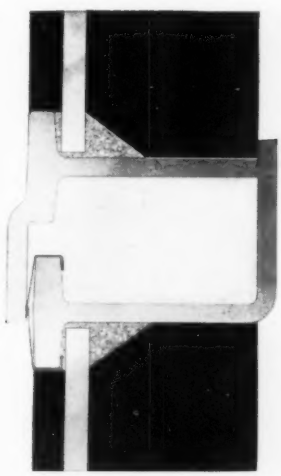

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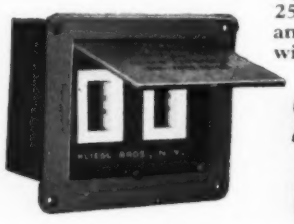

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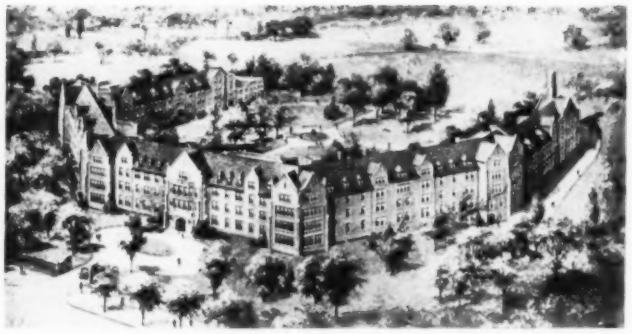

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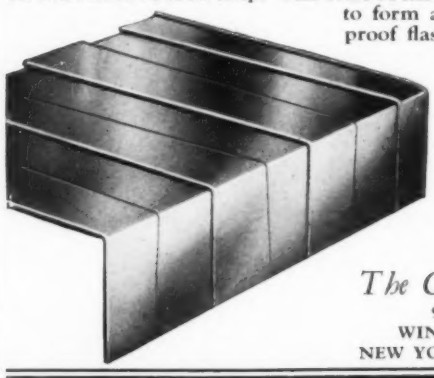
INTERLOCKING WALL FLASHING
prevents ≈ seepage · leaks · efflorescence

CHENEY INTERLOCKING WALL FLASHING IS A THRU-WALL COPPER flashing that positively prevents seepage, leaks and the usual unsightly and destructive results of neglecting to thru-flash the walls.

"It does not break the bond" because when laid between two courses of masonry it forms a perfect mechanical key-bond in every direction. It is keyed both horizontally and vertically on both sides of each strip. The ends of the strips hook together to form a continuous waterproof flashing.



Cheney Interlocking Wall Flashing comes ready-to-use; is laid by the Mason as fast and easily as brick; requires no special fitting, soldering, or loss of time.

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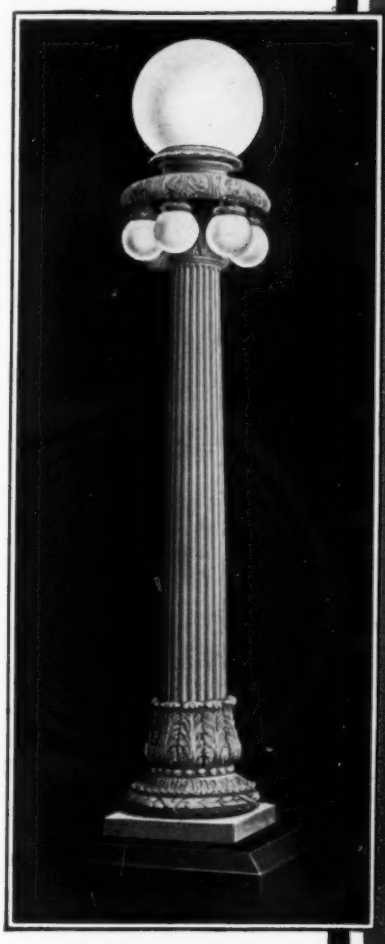

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LIGHT ENHANCES THE BEAUTY OF ANY BUILDING

THROUGH the aid of decorative lighting, modern architecture has taken on new glory. After dark, light paints the skyscraper in glowing colors, accentuating its beauty. Brackets, newels and entrance standards serve to illuminate the smaller buildings and invest them, too, with the mystic beauty of light.

Whatever you require in the way of exterior lighting fixtures, Union Metal can supply. Hundreds of designs of standard fixtures are available in many different finishes.

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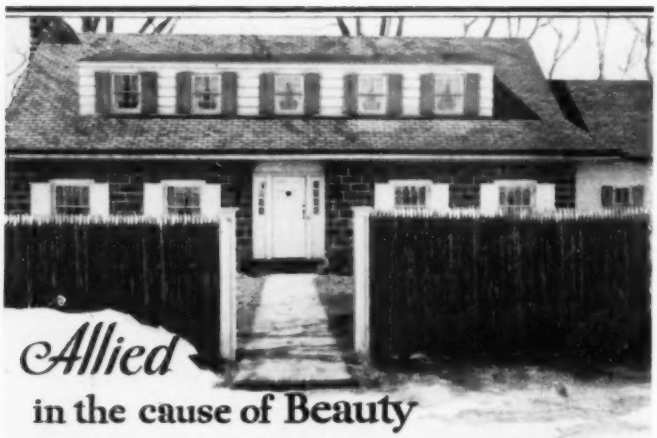

Allied

in the cause of Beauty

FRENCH PROVINCIAL *and* DUTCH COLONIAL

ONE of the most popular forms of architecture today is Dutch Colonial. Unfortunately, highways, neighboring countrysides and estates are not always in harmony. There is no more charming way to blend your property with its surroundings than with the French Provincial Woven Wood Fence. It not only creates harmony but stands as a sturdy sentinel protecting your grounds from the passing and trespassing world.

No painting or upkeep is required, for it is staunchly impervious to wear. Made of live chestnut saplings, woven with Copperweld rustproof wire and sold with a fifteen-year guarantee by the Robert C. Reeves Co., its sole importers.

Write for literature describing this fence and other Reeveshire products, sent without obligation

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Woven Wood Fence
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Oldest and largest distributors of wooden fences in America

GOOD TASTE + STRENGTH

"BEAUTY WITHOUT INTERRUPTION"

COMPLETELY invisible when the door is closed. Flush doors - clean lines - no undesirable projections.

Manufactured with scientific precision as befits a quality product - yet surprisingly low in cost.

There is a Soss Invisible Hinge for every purpose. See our line in Sweet's Catalogue "D" or write direct to us for our own complete catalogue.

Suggestions for Uses:

House Doors — Folding Partitions
Secret Panels — Radiator Covers
Folding Tables
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Established 1908
SOSS MANUFACTURING CO., Inc
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Victoria Dispensing Cabinets are made of pressed steel in chrome, white enamel and other attractive finishes. Patented device permits

cabinet to be opened to a horizontal position for convenient refilling. These modern cabinets can be locked to prevent theft of tissue.

THE MODERN WAY

The modern way to dispense toilet tissue is the cabinet way! That is why Victoria interfold tissues and dispensing cabinets are used in leading buildings everywhere. Victoria tissues are always dependable in quality. Our cabinets check waste and protect the tissue from dust and unsanitary handling. Write for full information. The Victoria Paper Mills Co., Fulton, N. Y.

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THREE LEAF — WALPAK TISSUE — INDUSTRIAL TISSUE

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Floodlights
Now Made Throughout of
BEL-CROME

LIFE is added to and weight subtracted from Bel-Sun-Lite Floodlights by the adoption of Bel-Crome for housings as well as reflectors. This marvelous new alloy of chromium is strong as steel, light as aluminum, resists tarnish and reflects more light than any other metal. With this improvement Bel-Sun-Lite Floodlights come very, very close to the perfection that is their goal. When your imagination projects a floodlighted building, go forward securely, for you now know of the one superb means of materializing your vision.

Ask our representative about Bel-Sun-Lite Floodlights made of Bel-Crome. His name and address are in the classified telephone directory of the nearest listed city.

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NEW JERSEY'S TALLEST

LEFCOURT-NEWARK BUILDING, NEWARK, N. J.
Architect: Frank Grad, Newark, N. J.
Engineer: Eadie, Freund & Campbell, New York City
Plumbing Contractor: Jaehnig & Peoples, Newark, N. J.
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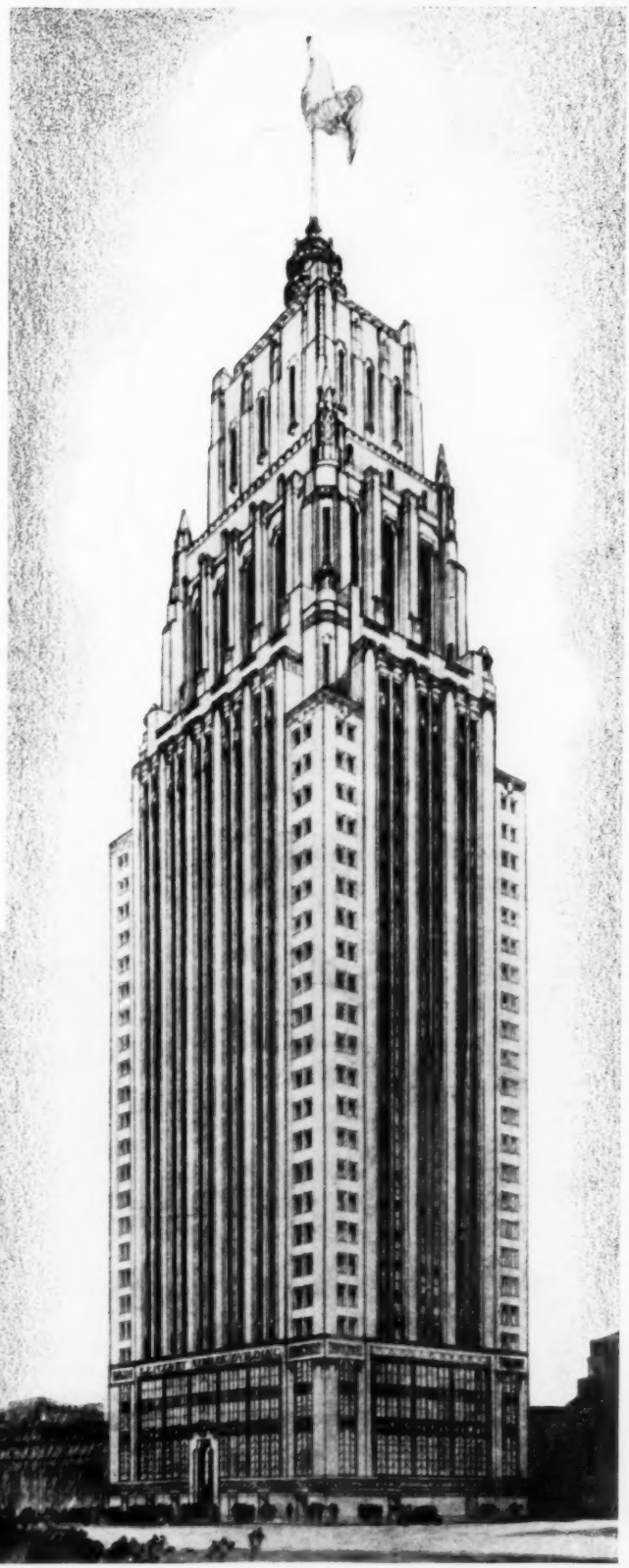

Unusually effective in interior plan with its commanding and graceful exterior lines, this recently completed building ranks with some of the finest in the land, a structure of which New Jersey may well feel proud. Thirty-seven stories from street to tower—the highest building in the State of New Jersey—the Lefcourt-Newark Building is the latest addition to Newark's skyline. Naturally the architects and engineers, experienced in specifying for some of America's finest buildings, turned to time-tested and quality-proven material.

Thus, as in many previous instances, they chose NATIONAL for the major pipe tonnage. In addition to NATIONAL Pipe for the heating, soil and waste lines, they specified NATIONAL Copper-Steel Pipe for the vent lines and rain leaders as an additional protection against atmospheric corrosion. Many years of experience and numerous service tests have proven that copper-steel pipe gives added life to those lines exposed to alternate wet and dry conditions. Write for Bulletin No. 11, describing—

NATIONAL COPPER-STEEL PIPE
The Original Copper-Steel Pipe

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Subsidiary of United States Steel Corporation

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Trade-Mark

SAMSON SPOT SASH CORD

Trade-Mark Reg. U. S. Pat. Off.

MADE of extra quality stock, carefully inspected, and guaranteed free from imperfections of braid or finish. No adulteration to increase weight and decrease wear.

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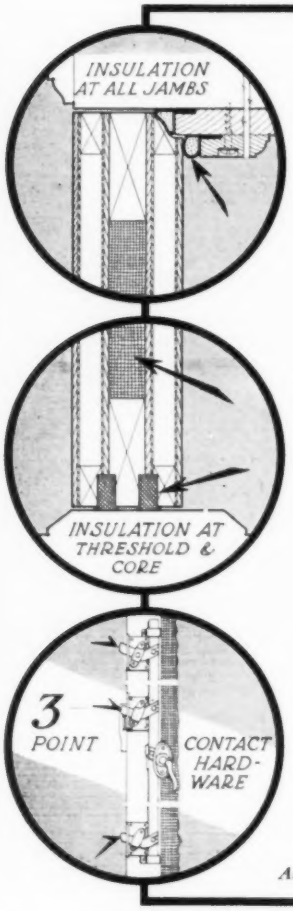

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are scientifically built to retard noise.

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Catalog C of Leonard Valves, showing Art Line and Colors to match bathroom fixtures, is now ready.

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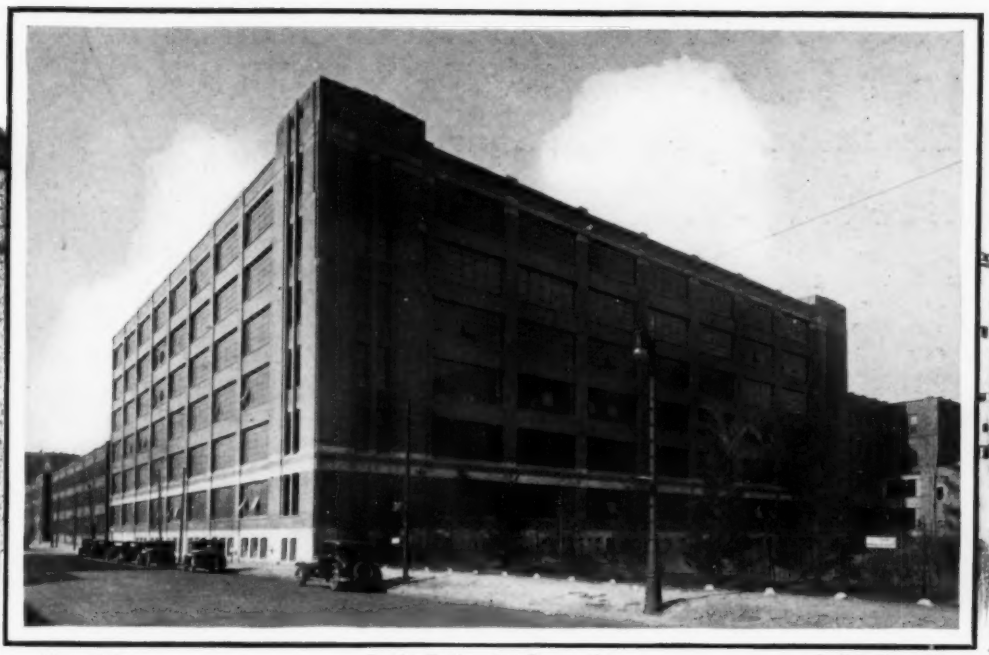


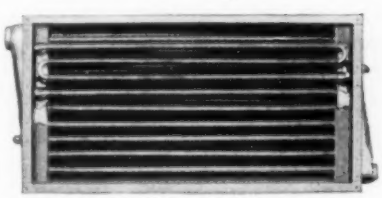
Albert Kahn
Architect-Engineer

Carrier Engineering Corporation
Air Conditioning

Photography by Davis B. Hillmer

Buffalo Forge Co.
Fan System Apparatus

—*and now* AEROFIN *is helping* Parke, Davis & Co. *to build* The Fortresses of Health



The Standardized Light-Weight Fan System Heat-Surface

4 Types **196 Standard Sizes**

Pressures up to 350 lbs. gauge.

Section illustrated is AEROFIN, 2½ to 200 lbs.

IN this newest Building of the great group comprising the Detroit Plant of Parke, Davis & Co., the world's largest makers of pharmaceutical and biological products, AEROFIN is the Heat-Surface,—as it is in an imposing number of the Master Buildings of the world, created by such Masters as Albert Kahn.

The reason will become obvious to anyone who investigates. The investigation may be made, easily and effectively, by asking Newark to send you Bulletin R-60, 128 Pages of useful Information and Data, including 28 proved Piping Diagrams in four colors, and large, readable Temperature Effect Charts on linen. Please use your business letterhead.

Any Office will gladly render prompt, efficient technical cooperation

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ARCHITECTS' ANNOUNCEMENTS *and* NOTES IN BRIEF

CALENDAR OF EVENTS
GENERAL ANNOUNCEMENTS

May 20-Oct. 1	Exhibition of modern Architecture and Industrial Arts at Stockholm, Sweden.
June 9-July 19	Summer session of New York University School of Architecture.
June 19-30	The Fourth Pan-American Congress of Architects and Architectural Exhibition at Rio de Janeiro.
Aug. 4-9	International Exposition of American Import Trade, Grand Central Palace, New York.
Aug. 12-21	Study Tour of the International Housing Association in Denmark, Sweden and Norway.
Sept. 7-14	Twelfth International Congress of Architects, Budapest, Hungary.
Oct. 7-10	Annual convention of the Illuminating Engineering Society. Hotel John Marshall, Richmond, Va.
Oct. 8-12	Sixth National Conference of Church Architecture, Cleveland, Ohio.
Nov. 18-29	Art Exhibition, Royal Institute of British Architects, London (9, Conduit Street).
1930	Entries in the competition for the most beautiful bridge in North America are invited. Information can be had from F. H. Frankland, c/o Bridge Committee, American Institute of Steel Construction, Inc., 200 Madison Ave., New York City.
In Oct. 1930	The Department of Architecture of the University of New York will begin a series of lectures on "Promoting and Financing Building Projects."

LUTAH MARIA RIGGS, Architect, and WILLIAM ALLEN HORNING, have formed a partnership for the practice of Architecture.

THE FIRM of Morris and Weinberg, Architects, has been dissolved owing to the death of Mr. Charles Morris, F.A.I.A. Mr. Joseph L. Weinberg will continue independently at The Union Building.

IVAN H. RILEY AND COMPANY, Architects and Engineers, have moved to their new address at 203 North Wabash Avenue.

JOHN WOOLLEY, Architect, has moved his office to 29 West 46th Street, New York City.

MAX SANDFIELD, Architect, has opened offices recently in the Milam Building, San Antonio, Texas.

GEO. P. TURNER, Architect, and E. M. VAN ARMAN, Architect, have formed a partnership with offices at 1221 Martin Building, Birmingham, Ala.

EDWARD D. SLATER, Architect, formerly of the firm of Turner and Slater, will practice in the future under the name of Edward D. Slater, Architect, with offices at 635 Martin Building, Birmingham, Ala.

WALLIN AND COMER, Architects, have dissolved partnership. Mr. Arthur F. Comer will practice at 909-910 Realty Building, Savannah, Georgia.

THE CRAFTEX COMPANY have moved into their new quarters at 60 East 42nd Street, New York City.

WALTER A. MCDOUGALL, Architect and Engineer, has moved to his new office at 360 North Michigan Ave., Chicago.

EDWIN H. BROWN

Edwin Hacker Brown died in Minneapolis, on Monday, April 21, after a brief illness from pneumonia. He was 54 years old.

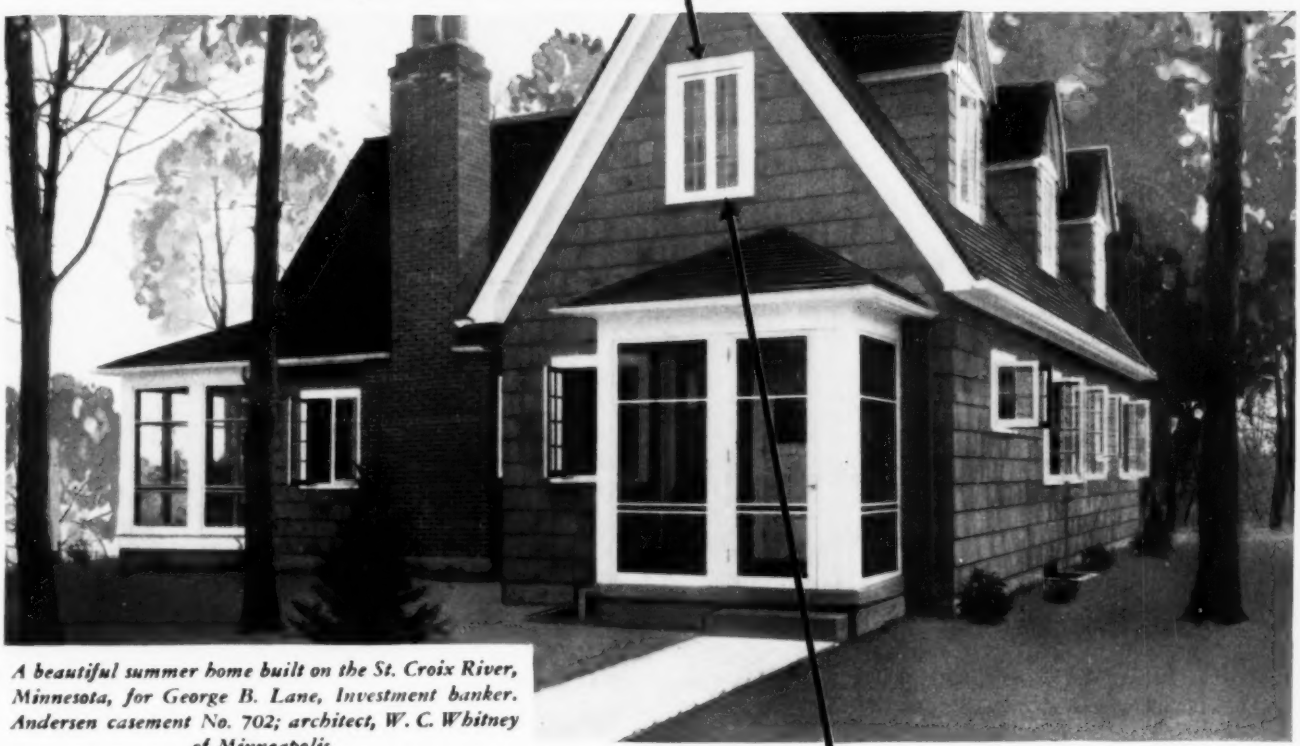
As a member of the Architectural firm of Hewitt & Brown, Mr. Brown contributed heavily to the architectural progress of the Northwest. He devoted himself to his native city with an always active interest in eliminating unsafe structures and hodge-podge arrangement for orderly sanitary growth.

He was a past secretary of the A.I.A., and still a member of President Hoover's commission of the Department of Commerce on basic building codes at the time of his death.

ILLINOIS STUDENTS WIN BRIDGE PRIZE

Three students at the University of Illinois won the three cash prizes of 1930 offered by the American Institute of Steel Construction for the most beautiful design of a steel bridge submitted by architectural students. These prizes, amounting to $500, $250, and $100, respectively, were made through the Beaux-Arts Institute of Design. A total of 160 students enrolled in the competition and submitted sketches in the preliminary judgment. The problem called for a design of a steel bridge of 650 feet total length and with a main arch span of 325 feet.

Architects welcome this new frame with locked sill-joint . . . of genuine white pine



A beautiful summer home built on the St. Croix River, Minnesota, for George B. Lane, Investment banker. Andersen casement No. 702; architect, W. C. Whitney of Minneapolis.

FOR character, for beauty, for a century of endurance, the architect now can rely on these casement frames of genuine white pine . . . the new Andersen Master Frame with locked sill-joint.

Consider the added value built into these new casements, perfected by Andersen at frame headquarters . . Bayport, Minnesota. First consider the locked sill-joint, a guarantee of rigid, permanent construction. Then the wide blind stop feature . . weathertight insurance. Then the 3 inch per foot sill slope for good drainage. Also the many other Andersen features, including the patented, noiseless pulley.

HERE, indeed, is a Master Frame, made in 640 stock sizes, adapted to every architectural style, low in first cost, easy to install, seasoned and ready for a century of faithful service.

ARCHITECTS of America today are writing . . . on their specification sheets . . . a remarkable tribute to the new Andersen Master Frame, with the locked sill-joint, made only of genuine white pine.

Remember, there is an Andersen Master Frames for every type of construction. Send for your copy of our new catalog, No. 500, or turn to Sweet's, pages B2549-72. ANDERSEN FRAME CORPORATION, Headquarters; Bayport, Minnesota, represented by 3,300 leading jobbers and dealers.

Andersen MASTER Frames

OF GENUINE WHITE PINE — FOR WINDOWS AND DOORS

BAYPORT — MINNESOTA

The prizes were awarded at the final judgment to George D. Recher, first; Russell O. Deeter, second, and Don P. Ayres, third, all of the University of Illinois.

REGISTRATION OF ARCHITECTS, AGAIN

A registration law for architects in every State in which such a law does not now exist is being actively urged by The American Institute of Architects. The Institute's committee on registration laws has reported that the work of registered architects is better than the poor material turned out by amateur and untrained practitioners, both in design and safety of construction. Arthur Peabody, of Madison, Wisconsin, State Architect of that state, chairman of the committee, says:

"It is a short-sighted policy to rest upon the condition that architects in a certain State are doing good work and plenty of it, without registration, or for an architect to say that his talent is above the need of licensing. No other great profession carries on that way.

"Registration is a matter of interest also to the engineers of the country, who, through their societies, are reported to be moving forward strongly to secure the necessary legislation for registering professional engineers."

ARCHITECTS TELL HOW TO CHOOSE AN ARCHITECT

A leaflet addressed to "each board of education of New Jersey Municipalities" was recently issued cooperatively by nine architects' societies in that state. It tells about "Choosing an Architect." Some excellent advice is given, in particular on the subject of "the Free Sketches Fallacy" and "the Scramble." The conclusion is that rarely can anything take the place of the Board's "seeking out a good architect before sketches or other drawings are made."

SUMMER SCHOOL AT FONTAINEBLEAU

About one hundred and twenty-five American artists and art students will be registered at the American School of Fine Arts at Fontainebleau for the coming summer session, according to an announcement made by Jacques Carlu, director of the school and professor of architecture at the Massachusetts Institute of Technology. The summer session will begin on June 25th and continue for three months.

The Fontainebleau School, was founded eight years ago through the initiative of the French Government and the ministry of Fine Arts. Administration is in the hands of a French committee and the enrollment of students is under the direction of a committee of prominent Americans, among them, Mr. Whitney Warren, Mr. Ernest Peixotto, Mr. Edwin H. Blashfield, Mr. Kenneth M. Murchison, Mr. J. Monroe Hewlett, Mr. James Earle Frazer, Mr. Benjamin Wistar Morris, Mr. Howard Greenley, Mr. Thomas Hastings, Mr. John Mead Howells, Mr. Hermon A. MacNeil, Mr. James Gamble Rogers, Mr. Harvey Wiley Corbet, Mr. W. Howard Hart and Mr. Ronald H. Pearce.

The curriculum of the school is designed primarily for professional artists and advanced students, although provision is to be made for a few beginners. Enrollment for the school of architecture is made through Mr. Whitney Warren. The New York address for the Fontainebleau School is 119 East 19th Street.

A MUSEUM OF INDIAN LIFE

Plans for the construction of a museum and laboratory for the study of American Indian life in the heart of the cliff-dwelling area of New Mexico have been completed with the selection as architect of John Gaw Meem of Santa Fe.

When completed the project will provide research laboratories, museum exhibitions, libraries, lecture halls and adequate facilities for graduate instruction in archaeology as well as public education in the history of America's native races. Standing in the center of the cliff-dwelling area, and near the largest Pueblo Indian villages, the laboratories will enable research workers to study New Mexico's valuable historic relics without their removal from the state.

ARCHITECTURE FOR ILLUMINATING ENGINEERS

The Illuminating Engineering Society believes that in order to be of real service to the architect, the illuminating engineer must know more about the architect's problems and be able to talk to the architect in his own language. To accomplish this purpose two courses in the fundamentals of architecture for illuminating engineers are being organized by the Society to be held concurrently in the early fall.

One of these courses, limited to 75 registrations, will be held at the Architectural League Club House, New York City, under the auspices of Columbia University, September 8 to 13, inclusive; and the other, limited to 100 registrations, will be held concurrently at the Art Institute, Chicago, by the Schools of Architecture of the University of Illinois and the Armour Institute.

JOHNS-MANVILLE ABSORBS STEVENS SOUND-PROOFING

The Johns-Manville Corporation have announced the purchase of the assets and patents of the Stevens Sound-Proofing Company, of Chicago, manufacturers of patented structural products for sound insulating in walls, floors and ceilings.

"FIR-TEX" INSULATOR

Made from wood base without any adhesive binder, a new insulation material called Fir-Tex, has been produced which it is claimed embodies good insulation plus unusual structural strength, water-proofing and fire-resisting qualities.

The method of manufacture involves the use of sawmill waste, principally Douglas Fir.

The plant of the Fir-Tex Company is located at St. Helens, Oregon.

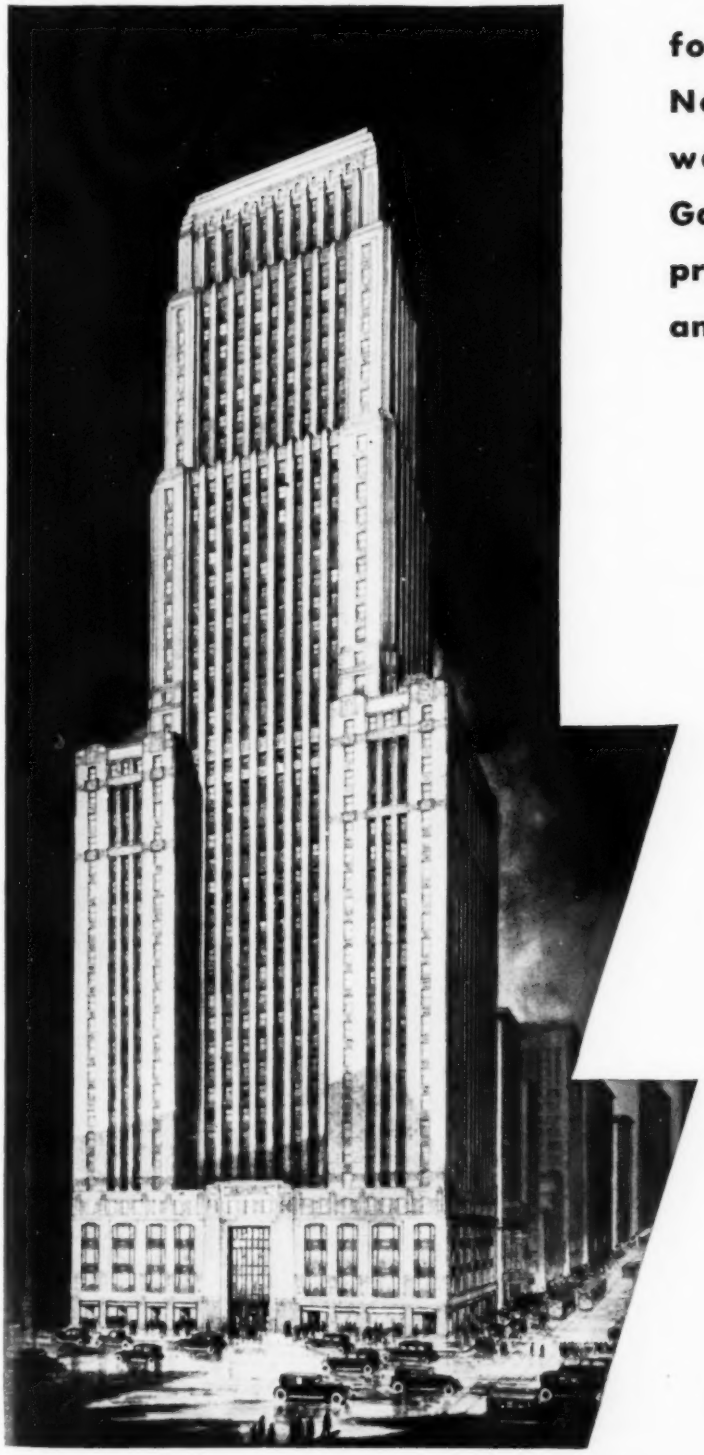
NATIONAL GYPSUM TAKES OVER SALE OF MAFTEX INSULATION

According to a joint announcement just issued by William L. Geddes, president of the MacAndrews and Forbes Company of Camden, N. J., and M. H. Baker, president of the National Gypsum Company of Buffalo, N. Y., the entire sales and distribution of Maftex Insulation Board have been taken over by the National Gypsum organization.

This arrangement will result in Maftex being added to the Gold Bond line of gypsum and lime products. The National Gypsum Company will institute an aggressive sales and advertising campaign to make Maftex well known as a Gold Bond product. Maftex is made from the roots of the licorice tree.

The

STRUCTURAL STEEL



for this new office building at No. 1 North LaSalle St., Chicago, was fabricated in our plant at Gary, Indiana, from steel materials produced by Illinois Steel Company and Carnegie Steel Company.

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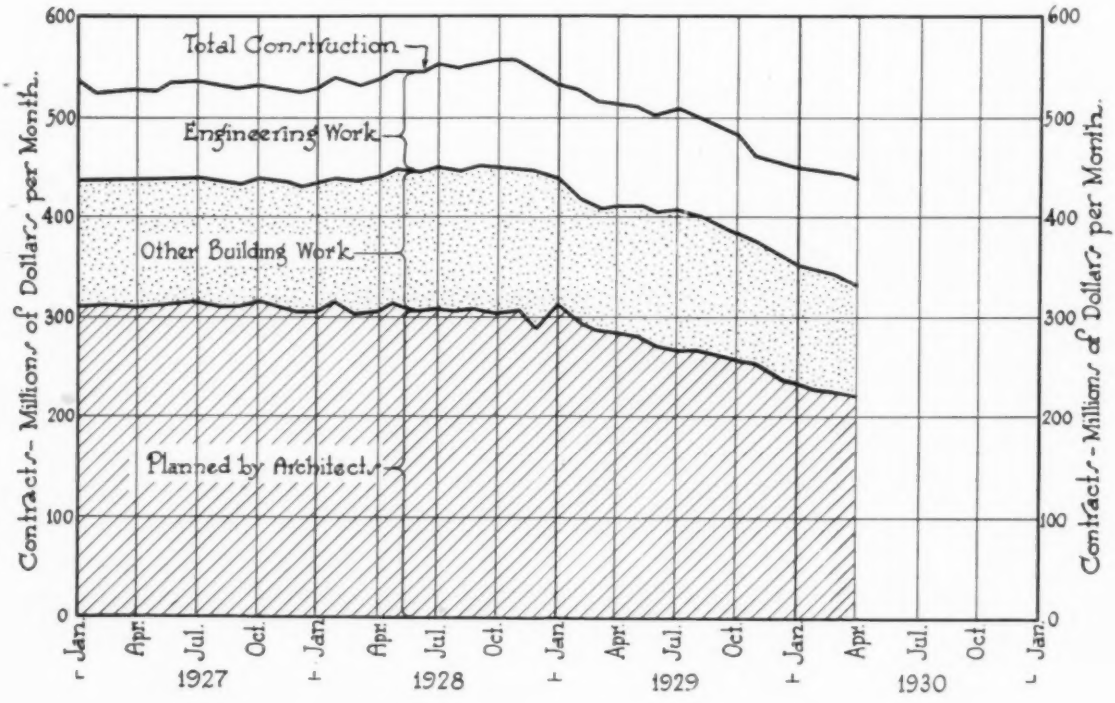
CONSTRUCTION STATISTICS

From the records of F. W. DODGE CORPORATION, Statistical Division. The figures cover the 37 states east of the Rocky Mountains and represent about 91 per cent. of the country's construction volume. They include projects amounting to $5,000 and up.

First Four Months, 1930

	TOTAL CONTRACTS		WORK PLANNED BY ARCHITECTS		
	Number of Projects	Valuation	Number of Projects	Valuation	Per Cent. of Total
Commercial Buildings	8,060	$277,198,100	3,076	$222,482,200	80
Industrial Buildings	1,867	184,218,700	649	55,899,700	30
Educational Buildings	1,124	110,754,200	962	106,569,700	96
Hospitals & Institutions	339	65,237,300	264	59,534,900	91
Public Buildings	422	43,735,200	252	34,775,900	80
Religious & Memorial Buildings	610	34,042,700	419	31,894,900	94
Social & Recreational Projects	795	45,899,300	496	40,639,500	89
Residential Buildings	24,816	366,028,600	6,469	213,438,500	58
Total Building	38,033	1,127,114,100	12,587	765,235,300	68
Public Works & Utilities	5,221	452,909,800	97	19,096,700	4
Total Construction	43,254	$1,580,023,900	12,684	$784,332,000	50
Total Construction, 1st 4 months, 1929	55,831	$1,897,889,800	16,328	$995,548,400	52



General Trend of Building and Engineering Construction

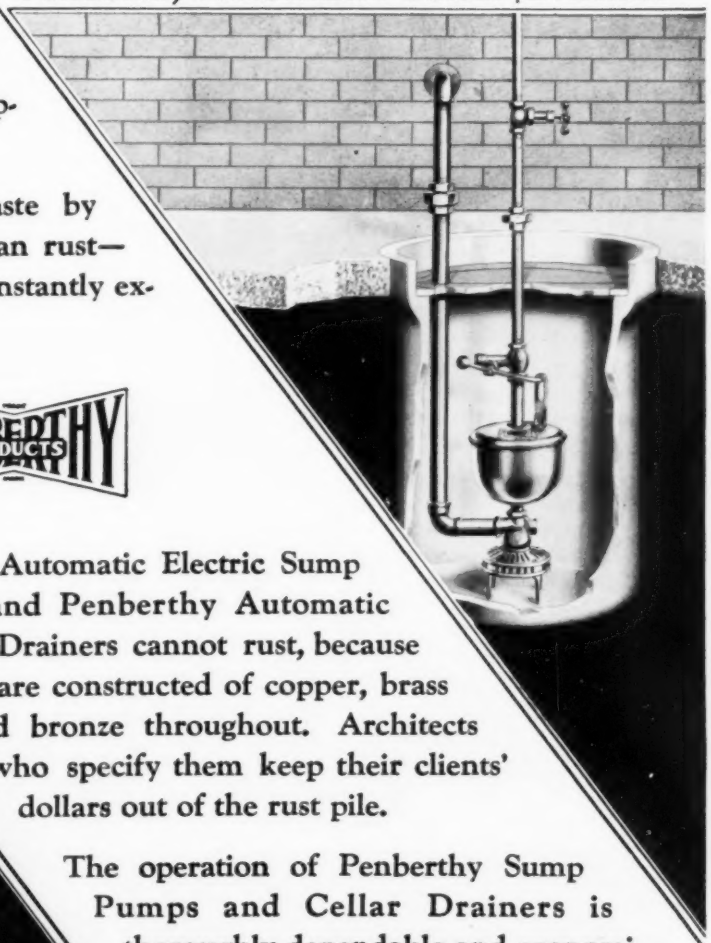
A $600,000,000 Waste!

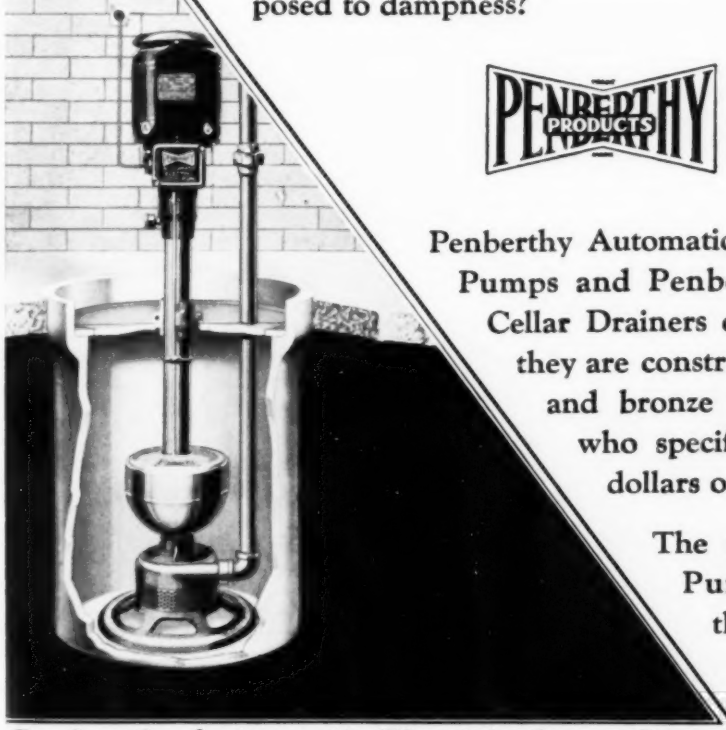
Are you responsible for a part of it?

The annual loss in the United States due to rust is estimated at $600,000,000. This figure is appalling—particularly when you realize that much of the loss is preventable by using equipment made from copper and its alloys.

Do you contribute to this waste by specifying equipment that can rust—for service where it is constantly exposed to dampness?

Penberthy Automatic Cellar Drainer





Penberthy Automatic Electric Sump Pump

PENBERTHY PRODUCTS

Penberthy Automatic Electric Sump Pumps and Penberthy Automatic Cellar Drainers cannot rust, because they are constructed of copper, brass and bronze throughout. Architects who specify them keep their clients' dollars out of the rust pile.

The operation of Penberthy Sump Pumps and Cellar Drainers is thoroughly dependable and economical. There is a size and type for every drainage requirement.

These Penberthy Pumps are quickly available—they are carried in stock by the leading jobbers throughout the country.

PENBERTHY INJECTOR COMPANY

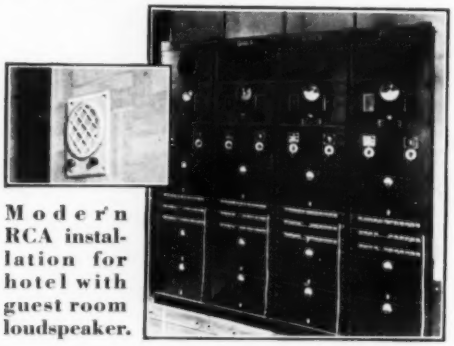
ESTABLISHED IN 1886

DETROIT

CANADIAN PLANT WINDSOR, ONT.

THE VERY LAST WORD

in modern radio installation for Apartment buildings and Hotels . . . .



Modern RCA installation for hotel with guest room loudspeaker.

·RCA·

CENTRALIZED RADIO

The tenant of today demands the very last word in radio installation. That is why modern specifications call for the installation of the antenna distribution type of RCA Centralized Radio.

Hundreds of radio outlets may now be connected with common central antennae. Every tenant may immediately plug in with his own receiving set and hear any broadcast program. In this way unsightly antennae are definitely eliminated and individual reception is bettered by increased signal strength and reduction of interfering electrical noises.

Furthermore, RCA Centralized Radio equipment has been approved by the National Board of Fire Underwriters. Each and every item in this construction has been especially designed by RCA engineers and constructed for RCA Centralized Radio use.

That is why this new, modern system is now being installed wherever the very last word in radio equipment is desired. RCA Centralized Radio equipment is available in these two distinct forms:

1—A single antenna connected with a distribution system to individual radio receivers in rooms throughout the building.

2—Centralized Radio receiving equipment to distribute broadcast programs to loudspeakers in as many as 5000 rooms.

Descriptive pamphlets of these two systems and of the special apparatus designed for them are available for architects, builders and building owners.

The Engineering Products Division, RCA Victor Company, Inc., will answer inquiries and prepare plans and estimates without charge for installations of any kind. Our experience is at the disposal of architects, owners and builders without obligation.

ENGINEERING PRODUCTS DIVISION, SECTION A

RCA VICTOR COMPANY, INC.

233 Broadway, New York

Representatives in Principal Cities

See the RCA Centralized Radio Exhibit at the Atlantic City Convention of the RMA during the week of June 2nd.

A REVIEW OF CATALOGUES

RAY-PROOF RUBBER

Scientific light repellent for floors and walls. The story of the discovery and development of X-ray and the weakness of lead and plaster protection from its rays. Description and advantages of ray-proof rubber. Floor and wall treatment installation. Specifications for walls and floors. Stedman Products Company, South Braintree, Mass. 5⅜ x 8 in. 12 pp. Ill.

STRUCTURAL STEEL

Catalogue No. 618. "Standardized Service in Steel for One Story Buildings." Full description of the structural parts. Width, length and height standardization. Side wall construction: solid wall—windows. Roof deckings, ceiling and floor construction. Structural steel frame doors. Steel for airplane hangars. Service in steel. Detailed drawings and Macomber standardizations. The Macomber Steel Company, Canton, Ohio. 8½ x 11 in. 12 pp. Ill.

BOILERS, STEEL

Catalogue 88. Kewanee residence type R boiler for bungalows, homes and smaller buildings. Advantages of steel boilers. Ratings. Detailed drawings, data and measurements for coal-burning and oil-burning boliers. Gas boilers. Specifications. Kewanee Boiler Corporation, Kewanee, Ill. 8½ x 10⅝ in. 12 pp. Ill.

PARTITIONS, SECTIONFOLD AND ROLLING

Construction details; dimensions; doors and hardware. Typical installations. Details and specifications. Advantages. The J. G. Wilson Corporation, 11 East 38th Street, New York City. 8½ x 11 in. 32 pp. Ill.

STORE FRONTS, TERRA COTTA

Description of terra cotta and its advantages for store and store front construction. Color combinations and typical installations. 8½ x 11 in. 16 pp. Ill. Also booklet "Terra Cotta Buildings Superior for Floodlighting." Cost of terra cotta; permanent effectiveness. National Terra Cotta Society, 230 Park Ave., New York City. 8½ x 11 in. 16 pp. Ill.

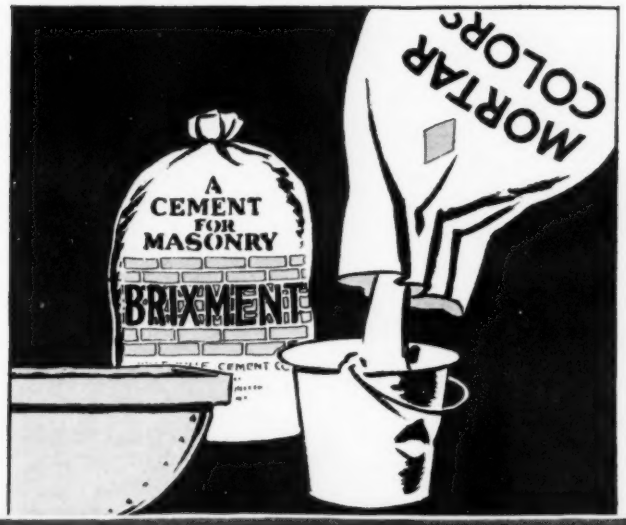
WOOD PANELING

"American Walnut for Interior Woodwork and Paneling." Value of good interior trim; cost of woodwork; specifications of the specimen room. How to obtain walnut woodwork. The figure in walnut. Walnut trim, floors and finishes. Advantages of American walnut. American Walnut Manufacturers' Association, 616 South Michigan Ave., Chicago, Ill. 8⅜ x 10¾ in. 24 pp. Ill.

WINDOWS, STEEL

Detention type windows for hospitals, jails and asylums. Full information and description. Advantages. Details of various types. Specifications. Typical installations. David Lupton's Sons Co., Allegheny Ave. and Tulip St., Philadelphia, Pa. 8¼ x 10¾ in. 12 pp.

(*Continued on page 192*)



PREVENT FADING OF MORTAR COLORS

FADING of mortar colors is usually caused by the presence of strong acids or alkalies in the mortar itself.

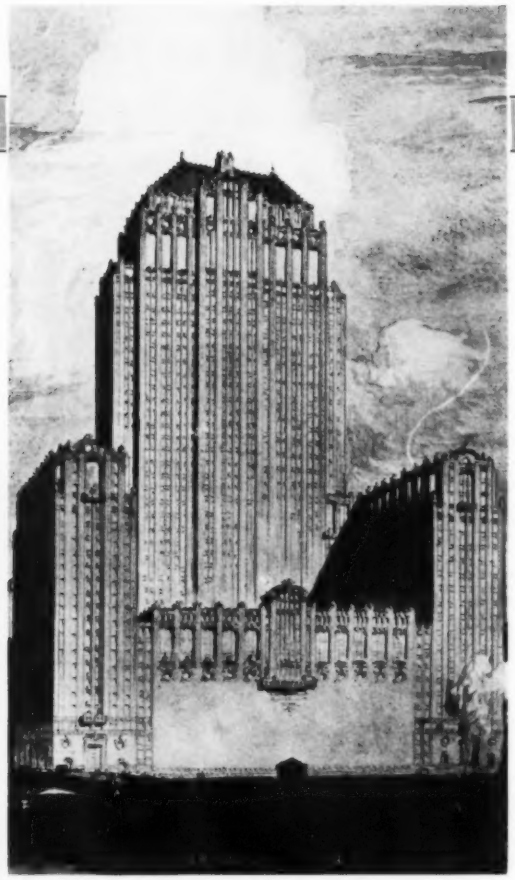
Brixment mortar never causes fading because it contains none of these injurious chemicals.

An added protection is the water-repellent quality of Brixment which prevents moisture from penetrating the joint and leaching out the pigment.

Brixment is therefore recommended and endorsed by leading color manufacturers themselves. Louisville Cement Company, Incorporated, Louisville, Kentucky.

CEMENT MANUFACTURERS SINCE 1830

BRIXMENT



This is the Civic Opera Building at Chicago

—a notable project for which Graham, Anderson, Probst & White were the architects and John Griffiths & Sons the general contractors.

The services rendered by Robert W. Hunt Company on this building included the estimation of weights for the structural steel work and also both mill and shop inspection of structural steel—of which the total was 27,457 tons.

See Sweet's A4

STEEL AT SHOP AND FIELD
CEMENT—CONCRETE
CONCRETE SUPERINTENDENCE

ROBERT W. HUNT COMPANY

Engineers

Inspection . . . . Tests

CHICAGO

All Large Cities

A REVIEW OF CATALOGUES—Continued

Skylights, Corrugated Wire Glass

Construction details as applied to gable end steel frames, concrete curbs, wood framing, etc. Special features, including low maintenance cost, weatherproofness, resistance to vibration and temperature changes. Typical installations. David Lupton's Sons Co., Allegheny Ave. and Tulip St., Philadelphia, Pa. 8½ x 11 in. Portfolio of 17 plates.

Fire Protection

Complete data for interior fire protection on cabinets, hose racks, fire hose units, Siamese, standpipe systems, fire line valves, fire extinguishers, etc. Description of operation and construction. Dimensions. Detailed drawings and specifications. Typical installations. W. D. Allen Manufacturing Co., 566-570 West Lake Street, Chicago, Ill. 9 x 11½ in. 24 pp. Ill.

Steam Heating, Venturafin

Bulletin No. 9218. Method of heating for floor, wall or ceiling mounting—full information. Description of various types. Heating element; forced heat principle. Piping diagrams. Temperature control. Capacity tables. Chart to determine air volumes. American Blower Corporation, Detroit, Mich. 8½ x 11 in. 24 pp. Ill.

Low Pressure Heating

Complete information is contained in the 15-page catalogue of the H. B. Smith Co., displaying their low pressure steam and hot water heating boilers, radiators and accessories, to meet the requirements of any size installation. The catalogue is replete with detail illustrations and diagrams, explanations, etc., of all features and advantages of their products, and all necessary information for specifications is given. 15 pp. H. B. Smith Co., Westfield, Mass. (This catalogue is in Sweet's for 1930.)

Cooking Ranges

The beauty and utilitarian features of the American Stove Co. gas ranges are interestingly and completely shown in their 10-page catalogue. Color in modern mode is featured and all necessary working information is fully tabulated in simplest form. Coal and wood burning stoves are also among the products of this company. 10 pp. American Stove Co., 925 Chouteau Ave., St. Louis, Mo. (This catalogue is in Sweet's for 1930.)

Incinerators

Washburn & Granger, Inc., have filed their complete catalogue No. 17 of ten pages showing Dean Incinerators in all classes and sizes for the disposal of garbage, refuse, waste, etc.

Details for varied forms and uses are graphically shown, including installations for domestic, commercial, industrial, hospital and miscellaneous uses. Structural features and general adaptability to architects' plans are well illustrated. 10 pp. Washburn & Granger, Inc., 50 Church St., New York City. (This catalogue is in Sweet's for 1930.)

(Continued on page 194)

A Convenience feature of the modern Residence

On the estate of Mr. Monroe Eisner, Red Bank, N. J., are fourteen telephone outlets: eleven in the residence, and one each in the superintendent's cottage, the stables and a detached garage. Built-in conduit connects these outlets and carries the wiring for the telephone system which includes intercommunicating features. The dining-room and breakfast-room outlets are served with a portable telephone.

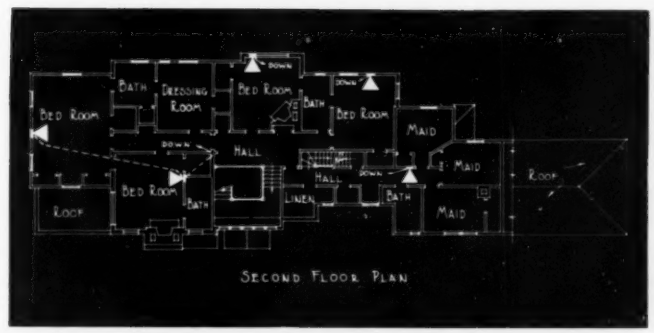
FRED M. TRUEX, Architect, *New York City.*

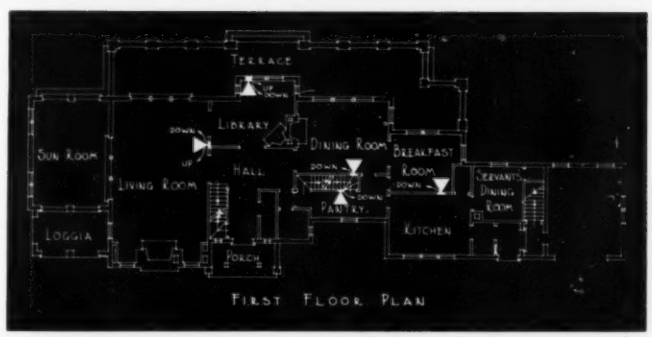
Telephone outlets *throughout* the house

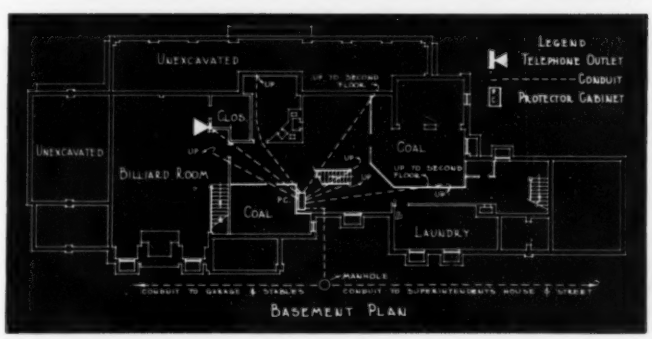
THE TELEPHONE REQUIREMENTS of the modern household are radically different from those of a few years ago. Telephones are needed in many locations . . . living-room, library, dining-room, kitchen or pantry, breakfast nook, garage, game room, bedrooms, servants' quarters . . . wherever, in fact, they will save steps and time, and add to comfort and convenience.

Many architects are meeting this demand for complete telephone convenience by specifying conduit for the telephone wiring in their plans for new and remodeled residences. In this way they provide for telephone outlets in all of the important rooms. The home owner can use just those he desires, and he can readily expand or rearrange the service to meet changing needs. In addition, he can enjoy the improved appearance that results from concealed wiring.

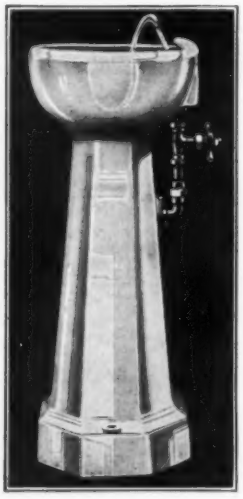
Your local Bell Company will gladly confer with you and your clients in planning the telephone arrangements for all your building projects. There is no charge. Just call the Business Office.



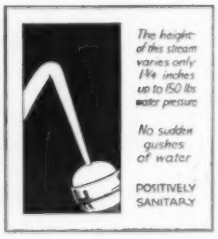




Architects Everywhere Are Turning to These Unique Fountains



Here is an invention that is capturing the attention of architects from coast to coast. Utterly different in principle, the new Century Bubblerhead completely conquers fluctuating water pressure. It banishes forever the unsanitary, inconvenient trickle and eliminates entirely sudden splashing gushes. The Century Automatic Bubblerhead functions with the same definite accuracy every day in the year, assuring the highest degree of practical sanitation.


The height of this stream varies only 1¼ inches up to 150 lbs. water pressure
No sudden gushes of water
POSITIVELY SANITARY

Eliminates Water Waste

The Century Bubblerhead does not waste a single drop of water. It has only two moving parts and is made of the finest bronze. Precision workmanship and long life are guaranteed. See the new beautiful fountains. There is a model for every need including a complete line of ice cooled fountains for industrial use. We urge you to send for complete information. The Century A.I.A. folder contains the full story of the new Century invention and gives definite specifications of all Century products. Write for it now.

CENTURY BRASS WORKS, Inc.

902 No. Illinois St. **Belleville, Illinois**

SANITARY DRINKING **Century Fountains**

A REVIEW OF CATALOGUES—Continued

Paints and Varnishes

All about painting and varnishing for all building construction and allied uses is told in 30 pages devoted to the Sherwin-Williams Co. catalogue. Selection may be made from complete color charts showing actual finished painted surface appearance and realistic stair effects. Specifications are presented in copy form. Valuable discussions and explanations are given of properties, methods and specific uses, etc. Attractive modern decorative wall treatments are featured as are also the new quick drying lacquers and varnishes. A full line of technical paints is described. The catalogue is not only illustrative in form but extremely instructive in text. 30 pp. Sherwin-Williams Co., 601 Canal Road, Cleveland, Ohio. (This catalogue is in Sweet's for 1930.)

Hardware

The Oscar C. Rixson Company devote 17 pages to their catalogue of floor checks, special hinges, casement hardware, etc. In this catalogue are to be found complete descriptions of single and double acting floor hinges, door stops and holders, ball bearing and friction hinges of special types, casement and transom operators and cremorne bolts, etc., to meet the most exacting requirements. Concise information is given for special use in specifications and for installation. 17 pp. The Oscar C. Rixson Company, Chicago, Ill. (This catalogue is in Sweet's for 1930.)

Safes and Vault Doors

Resistance to burglary and fire by means of baffling devices and formidable construction are imposingly illustrated in the seven pages of the Mosler Safe Co. catalogue. Descriptions, dimensions, specifications and suggestions for adaptation in plan accompany illustrations of safes and vault doors in such manner as to make catalogue selection easy. Automatic safeguards against heat and water damage are featured. 7 pp. Mosler Safe Co., Hamilton, Ohio. (This catalogue is in Sweet's for 1930.)

Greenhouse Construction

Lord & Burnham Company have a six page exposition of complete greenhouse construction. Along with illustrations of all necessary glazing framework and operating devices will be found details for masonry construction, plant beds, heating and ventilating equipment and devices. Small scale drawings of complete greenhouses with adaptations to landscapes are illustrated. Useful complete specifications are given. 6 pp. Lord & Burnham Company. Factories at Irvington, N. Y., Des Plaines, Ill. and St. Catharines, Ont. (This catalogue is in Sweet's for 1930.)

Store Front Construction

The Detroit Show Case Co. require six pages to show the architect how to design, detail and specify for their store front and show window construction. Stock patterns of mullions, muntins and awning bars in their "Desco" make are shown in great variety. Numerous illustrations show incidental masonry and wood construction. Master specifications are complete for all work by them and adjoining work "by others." 6 pp. Detroit Show Case Co., 1670 West Fort Street, Detroit, Mich. (This catalogue is in Sweet's for 1930.)

STORE FRONTS

Dayton's, Milwaukee, Wisconsin. Architect—Hugo V. Miller.

For excellence of workmanship, true reproduction of design and sound construction we advocate the fabrication of store fronts at our factory. A corps of skilled workmen trained by an institution with twenty-five years' experience in store front building is your assurance of satisfaction. Furnished in Bronze, Aluminum Alloy or Copper.

Kawneer
BRONZE
STORE FRONTS

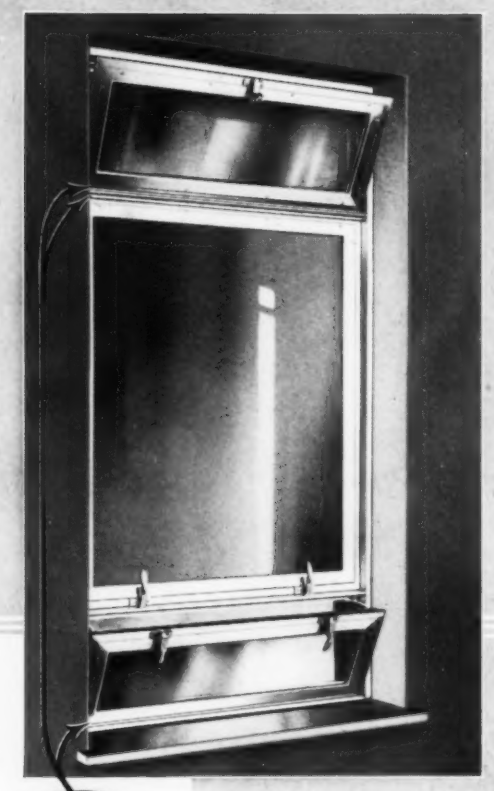
SEE OUR CATALOG IN THE 1930 SWEET'S

THE KAWNEER COMPANY, MANUFACTURERS OF BRONZE STORE FRONTS, WINDOWS AND DOORS
NILES, MICHIGAN. Subsidiary, BERKELEY, CALIF.

BRANCHES

Atlanta, Ga.	Cleveland, O.	Detroit, Mich.	Milwaukee, Wis.	Omaha, Nebr.
Baltimore, Md.	Cincinnati, O.	KansasCity, Mo.	NewOrleans, La.	Philadelphia, Pa.
Boston, Mass.	Charlotte, N. C.	Louisville, Ky.	NewYork, N. Y.	Pittsburgh, Pa.
Buffalo, N. Y.	Chicago, Ill.	Memphis, Tenn.	Niles, Mich.	Utica, N. Y.

SEE OUR EXHIBIT AT ARCHT'S SAMPLE CORP. NEW YORK CITY



Water-proof hinge
Patents applied for.

SEALAIR

WEATHER-PROOF
IN ANY WEATHER.

When closed, the asbestos-insulated union between sash and frame excludes wind, rain and snow. Even when opened, Sealair affords protection from drafts. The tilt of the sashes diverts the inflow of air, causing it to circulate freely to all parts of the room . . . All sashes can be washed from the inside . . . Furnished in bronze, aluminum alloy or steel.

Send for complete description, specifications and F. S. details.

THE
Kawneer
COMPANY
Niles, Mich.
Subsidiary: Berkeley, Calif.

ALSO WEIGHT-HUNG WINDOWS (Light and Heavy) AND CASEMENTS

CLASSIFIED DIRECTORY OF ADVERTISERS

Alphabetical Index to Advertisers, Page 212

After reviewing advertisements in this issue—use Sweet's Architectural Catalogues for 1930 for catalogue and specification information on the products of the most of the manufacturers.

Acid Proof Chemical Stoneware
Knight, Maurice A.

Acoustical Installation—Armstrong Cork & Insulation Co.
Guastavino, R., Co.

Acoustics
Armstrong Cork & Insulation Co.
Boston Acoustical Eng. Division of Housing Company
Johns-Manville Corp.

Air Compressors
Westinghouse Traction Brake Co.

Air Conditioner
Airway Electric Appliance Corp.
American Blower Co.
Buffalo Forge Co.
Lewis Corporation

Air Washer
Buffalo Forge Co.

Aluminum
Aluminum Co. of America

Anchors—Concrete
Bulldog Floor Clip Co.

Arc Welding—Lincoln Electric Co.

Architectural Supplies
Higgins, Chas. M., & Co.

Artstone—Rackle, George, & Sons Co.

Asbestos—Johns-Manville Corporation

Baking Machinery
Read Machinery Co.

Balances, Sash—See Sash Balances

Basement, Windows—Steel
Detroit Steel Products Co.
Truscon Steel Company

Bathroom Accessories
Parker Charles Company

Beads—Corner Metal
Milwaukee Corrugating Co.
Truscon Steel Company
Wheeling Corrugating Co.

Beams, Angles, Channels, Etc.
Carnegie Steel Company
Jones & Laughlin Steel Corp.

Belts—Dayton Rubber Mfg. Co.

Blackboards—Weber Costello Co.

Boiler and Pipe Covering
Johns-Manville Corporation
Ric-wiL Company

Boilers—American Gas Products Co.
American Radiator Co.
Bryan Steam Corp.
Heggie-Simplex Boiler Co.
Pierce, Butler & Pierce Mfg. Co.
Smith, H. B., Company, The, Inc.

Bolts—Door—Corbin, P. & F.

Brass and Bronze
See "Ornamental Metal"

Brass and Copper
See "Copper and Brass"

Brick—Finzer Bros. Clay Co.

Bridges—Steel—American Bridge Co.

Builders—Stone & Webster, Inc.

Buildings—Steel
Carnegie Steel Company
Nat'l Assoc. of Flat Rolled Steel Mfrs.

Butts—Corbin, P. & F.
Stanley Works

Cabinet Work—Hyde-Murphy Co.

Cabinets—Kitchen
Olean Metal Cabinet Works, Inc.

Cabinets—Medicine—Parker Charles Company

Cabinets—Toilet Paper
Victoria Paper Mills Co.

Casement Operators—Rixson, Oscar C., Company

Casements—Crittall Casement Window Co.
Detroit Steel Products Co.
International Casement Co.
Mesker Bros. Iron Company
Truscon Steel Company

Cast Stone
Cast Stone Institute

Cellar Drainer
Penberthy Injector Co.

Cement—Louisville Cement Company
Medusa Portland Cement Co.
Portland Cement Association
Universal Atlas Cement Co.

Cement White
Medusa Portland Cement Co.

Chain Sash—American Chain Co., Inc.
Detroit Steel Products Co.
Smith & Egge Mfg. Co.

Chairs—Marble, B. L., Chair Co.

Channels—Carnegie Steel Co.
Concrete Engineering Co.
Jones & Laughlin Steel Corp.

Church Memorials
American Seating Company

Clamps—Lock Joint
Hyde-Murphy Co.

Clay Vitrified
Clay Products Association

Clocks, Electric
Landis Eng. & Mfg. Co.

Columns, Porches, Etc.
Hartmann-Sanders Co.
Union Metal Mfg. Co.

Compressors—Air
Westinghouse Traction Brake Co.

Concrete Accelerator
Master Builders Co.
Solvay Sales Corp.

Concrete Construction—Reinforced
American Steel & Wire Company
Concrete Engineering Co.
Truscon Steel Company

Concrete Hardener
Master Builders Co.
Sonneborn, L., Sons, Incorporated
Solvay Sales Corp.

Concrete Piling—See Piling—Concrete

Concrete Ready Mixed
Transit Mixers, Inc.

Concrete Surface Treatment
Master Builders Co.
Solvay Sales Corp.

Conduit for Underground Heating Pipes
Ric-wiL Company

Conduits
Fibre Conduit Co.
Fretz-Moon Tube Co.

Conduo-Base
Conduo-Base Co.

Coping Wall
Clay Products Association

Copper and Brass
Revere Copper & Brass, Inc.

Copper Sheets
Revere Copper & Brass, Inc.

Cork Covering
Armstrong Cork & Insulation Co.

Cork Tile Flooring
Armstrong Cork Company, Custom Floors Dept.

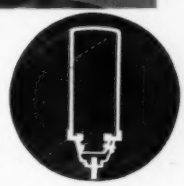
Corkboard
Armstrong Cork & Insulation Co.

Covering—Pipe and Boiler
Armstrong Cork & Insulation Co.
Johns-Manville Corporation
Ric-wiL Company

Dishwasher—Conover Company

Door Closers—Corbin, P. & F.
Norton Door Closer Co.
Sargent & Company

Door and Window Frames
Andersen Frame Corp.



Heavy tubular frame strongly welded

WELDED
BRONZE DOORS for
COMMERCIAL BUILDINGS

The rails and stiles of this door consist of heavy tubular members, the joints of which are strongly welded. The inner edge of the frame is trimmed with shapely mouldings used for securing the center panel. With necessary hardware furnished and applied the complete ensemble presents a unit appropriate for use in the finest commercial buildings.

Send for complete description and F. S. details.

THE
Kawneer
COMPANY
Niles, Mich.
Subsidiary: Berkeley, Calif.

ALSO SHOWER STALLS AND SHOW CASE DOORS

Art Stone Mantelpieces

In All Periods

Reproductions of beautiful old world mantels that recapture perfectly that indefinable attractiveness which gave the originals their charm.

Also Compo Ornaments For Woodwork

Jacobson Mantel & Ornament Company

322 East 44th Street
New York

LOUIS GEIB ARTHUR P. WINDOLPH

Doors—Bayley, William, Company
Compound & Pyrono Door Co.
Dahlstrom Metallic Door Co.
Detroit Steel Products Co.
Hamlin, Irving
Hyde-Murphy Co.
International Casement Co.
Kawneer Company
Kinnear Mfg. Co.
Peelle Company, The
Roddis Lumber & Veneer Co.
Sanymetal Products Co.
Security Fire Door Co.
Thorp Fire Proof Door Company
United Metal Products Co.
Weis, Henry, Mfg. Co.
Wilson, J. G., Corp.

Drains—Crampton-Farley Brass Co.
Josam Mfg. Co.

Drawing Inks
Higgins, Chas. M., & Co.

Drives—Cog Belt
Dayton Rubber & Mfg. Co.

Electric Switches
Hart & Hegeman Mfg. Co.
Hubbell Harvey, Inc.

Electrical Equipment
Adam, Frank, Electric Co.
American District Tel. Co.
Bryant Electric Company
Connecticut Tel. & Elec. Corp.
Fibre Conduit Co.
General Electric Company
Graybar Electric Co.
Hart & Hegeman Mfg. Co.
Holtzer-Cabot Electric Co.
Hubbell Harvey, Inc.
Imperial Electric Co.
Lincoln Electric Co.
Westinghouse Electric & Mfg. Co.

Elevator Doors
Peelle Company, The
Security Fire Door Co.
Tyler Company
United Metal Products Co.

Elevator Inclosures
United Metal Products Co.

Elevators
Otis Elevator Company
Tyler Company
Westinghouse Electric Elevator Co.

Enamels
Du Pont de Nemours, E. I., & Co., Inc.
Pratt & Lambert, Inc.
U. S. Gutta Percha Paint Co.

Engineers—Inspection
Hunt, Robert W., Company

Expanded Casings—Milwaukee Corrugating

Expanded Metal
Truscon Steel Company

Fence Post—Steel
American Steel & Wire Co.

Fence—Woven Wood
DuBois Fence & Garden Co., Inc.
Reeves, Robert C., Co.

Fences—American Steel & Wire Co.
Fiske, J. W., Iron Works

Finishing Lime
Ohio Hydrate & Supply Co.

Fire Exit Devices
Vonnegut Hardware Company

Fireplace Construction—Covert, H. W., Co.

Fireplace Unit—Heatilator Co.

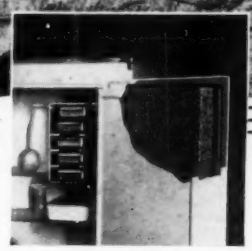
Fireproof Doors, Shutters and Windows
Compound & Pyrono Door Co.
Dahlstrom Metallic Door Co.
Detroit Steel Products Co.
Kawneer Company
Mesker Bros. Iron Company
Peelle Company, The
Thorp Fire Proof Door Company
Truscon Steel Company
United Metal Products Co.

The beautiful home of A. W. Wigglesworth in Kenilworth, Illinois. Exterior walls and second floor ceiling are insulated with Armstrong's Corkboard. Architect, Ralph Stoetzel. Contractor, Edward C. Anderson Co.

Like a Refrigerator

this home is protected against outside temperatures

Corkboard Insulation insures permanent year 'round comfort



To keep foods at just the right temperature, the finest domestic refrigerator has a lining of cork in sides, bottom, and top.

JUST as in a well-built refrigerator . . . corkboard insulation protects the interior of this house on the hottest days. And in the evening, after the sun has beaten madly on the roof all day, second-floor sleeping rooms under cork lined roofs are as cool as those on the first floor.

Next winter too, when cold winds blow lustily, this house, insulated with Armstrong's Corkboard, will be warm and comfortable. In the same way that summer heat is kept out, the warmth of the heating plant is conserved for December comfort. By preventing loss of heat the house is kept warm with a minimum of fuel consumption. A saving, actually large enough to pay the entire cost of insulation, is accomplished in a few years.

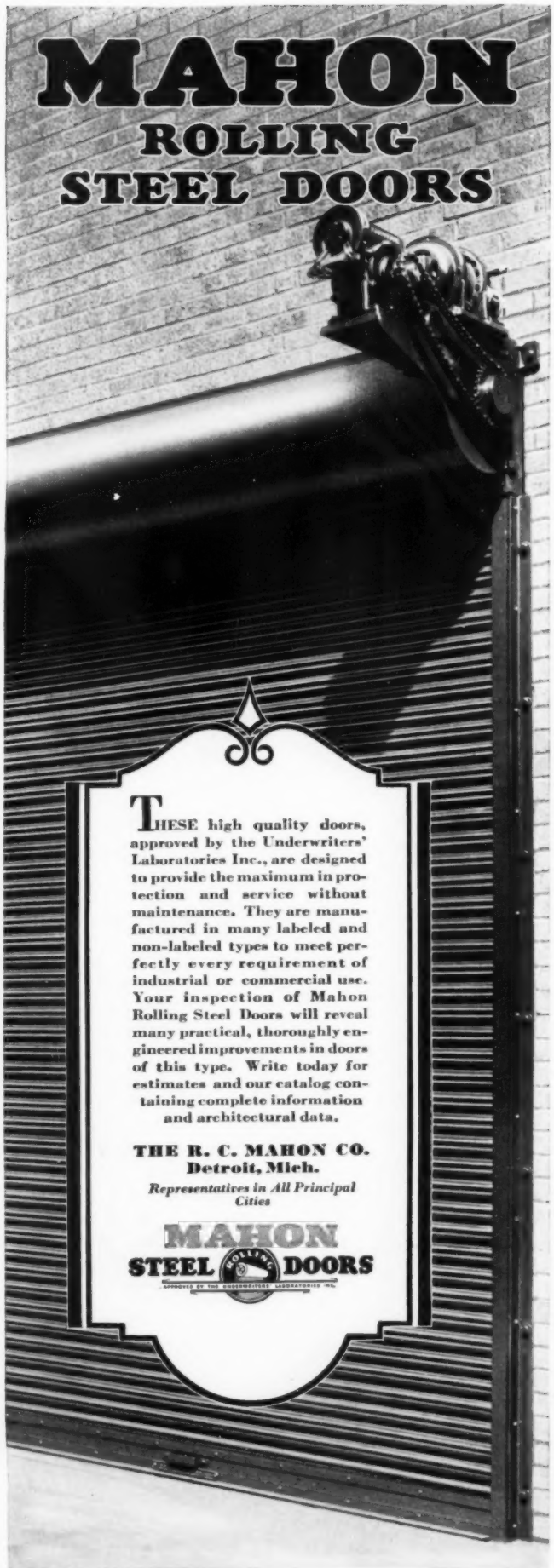
This comfort and economy are permanent benefits in houses insulated with corkboard. Armstrong's Corkboard never decays or disintegrates. When you specify Armstrong's Corkboard you assure the full advantages of insulation throughout the life of the building.

Armstrong's Corkboard is made in the correct thickness to give full protection against outside temperatures, winter and summer. Because it is adequate insulation, corkboard gives the greatest comfort and fuel saving for each dollar invested . . . effects the largest practicable saving of heat in proportion to the cost of the insulation.

You will find valuable information in our illustrated book, "Armstrong's Corkboard Insulation for Walls and Roofs of Buildings." Essential details of modern insulation and the structural strength and fire-retarding values of corkboard are thoroughly covered. We suggest that you write for this book. It will help you in making recommendations and cost estimates. Armstrong Cork & Insulation Company, 901 Concord St., Lancaster, Penna.

Armstrong's Corkboard Insulation

FOR THE WALLS AND ROOFS OF COMFORTABLE HOMES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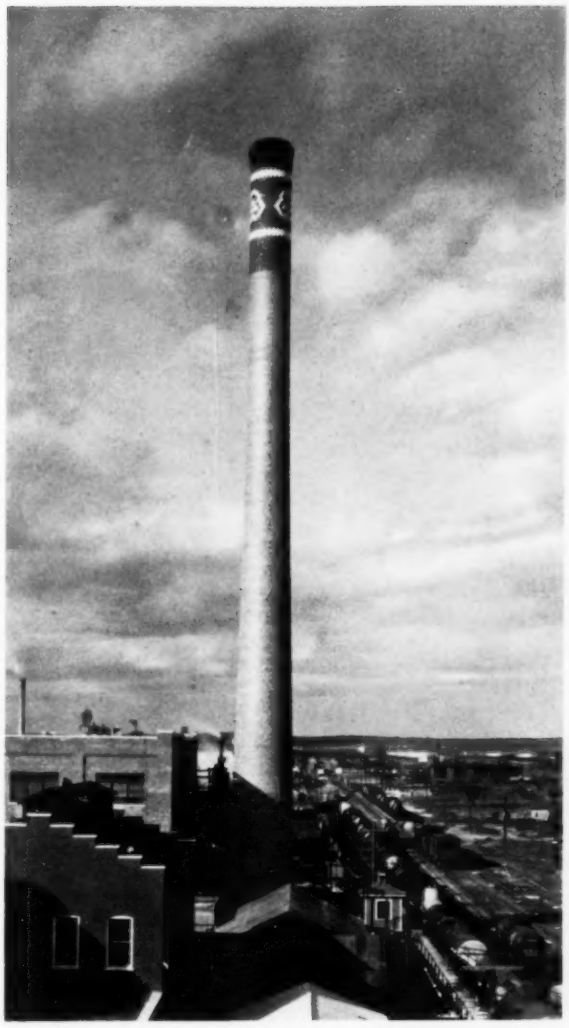

Radial Brick Chimney, 200' x 9' Diameter. Erected in 1929 for Empire Oil and Refining Co., Okmulgee, Okla., by Alphons Custodis Chimney Construction Company, New York.

"LIME Is Essential," Chimney Builders Say

MORTAR in tall, radial brick chimneys is subjected to the severest service test encountered in present-day construction.

Structures of this type sway appreciably under high wind pressure and expand and contract under the temperature extremes occurring. Hence to prevent cracking within itself, and shearing or tearing loose from the brick, a chimney mortar must be tough, elastic and adhesive.

These essential qualities are found only in mortars rich in lime. After much experimentation, chimney constructors are in general agreement on the proportions of 2 parts of lime to 1 of cement and 5 of sand. The Alphons Custodis Chimney Construction Company has used this mix for over 35 years with eminently satisfactory results.

Mortars rich in lime are successfully withstanding, without cracking, the extreme conditions imposed in tall chimney service in all sections of the country. This is conclusive evidence that such mortars can be depended upon to give water-tight masonry walls in buildings of all types, where the conditions are less severe. Make lime your principal bonding agent and guard against cracks, leaks and stains marring your work.

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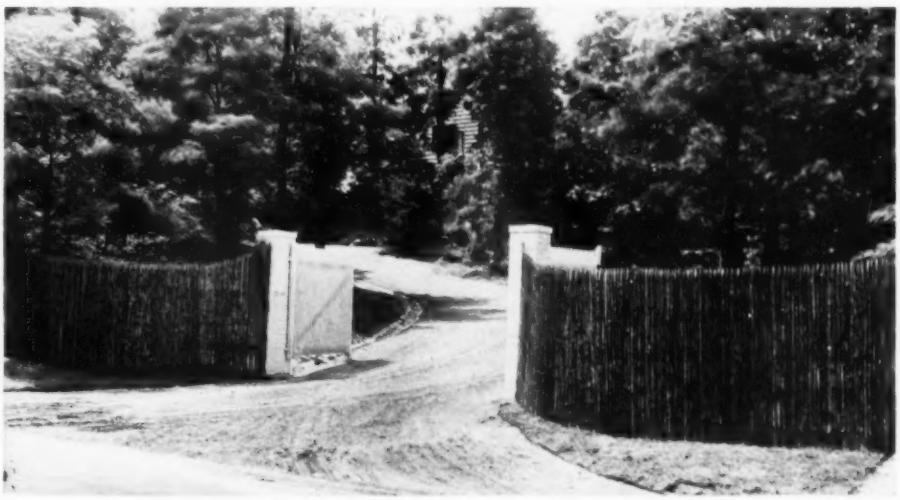

NOTHING but a fence that combines rare beauty and distinction could fit into a setting like this.

But Dubois supplies even more. It gives privacy and freedom from any painting or upkeep expense, and it lasts a lifetime.

Dubois lends itself to a wide variety of uses, from framing lovely gardens to screening service yard details or preventing trespass.

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Comes in 5 foot sections, in 5 heights, 3′ 10″, 4′ 11″, 6′ 6″, 8′ and 10′, with quaint gates to match. It is moderate in cost.

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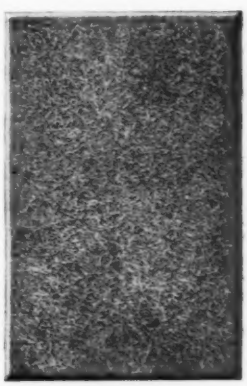

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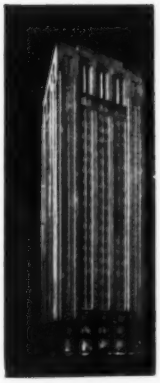

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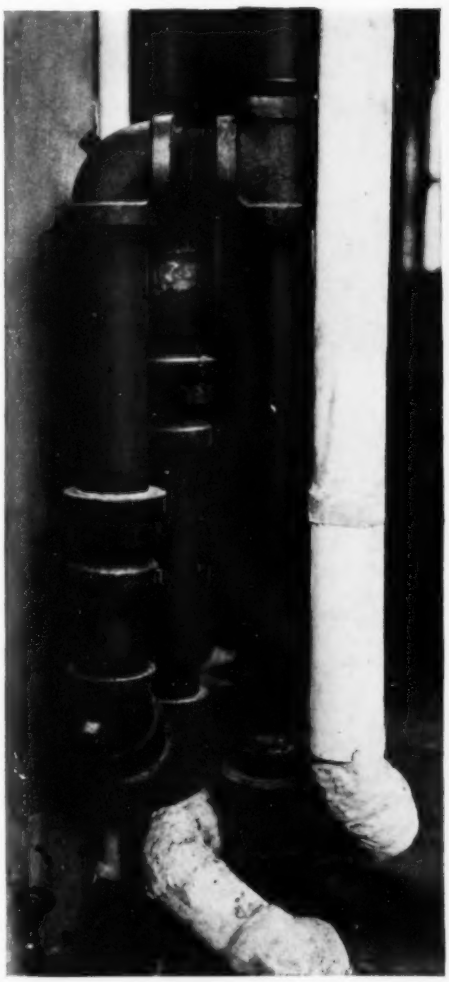

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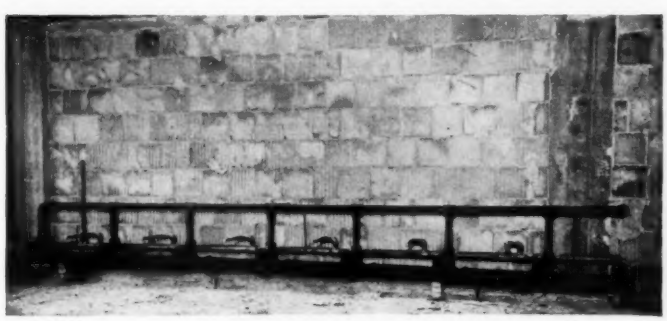

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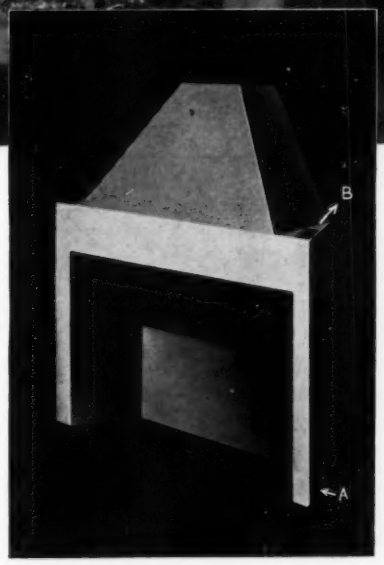

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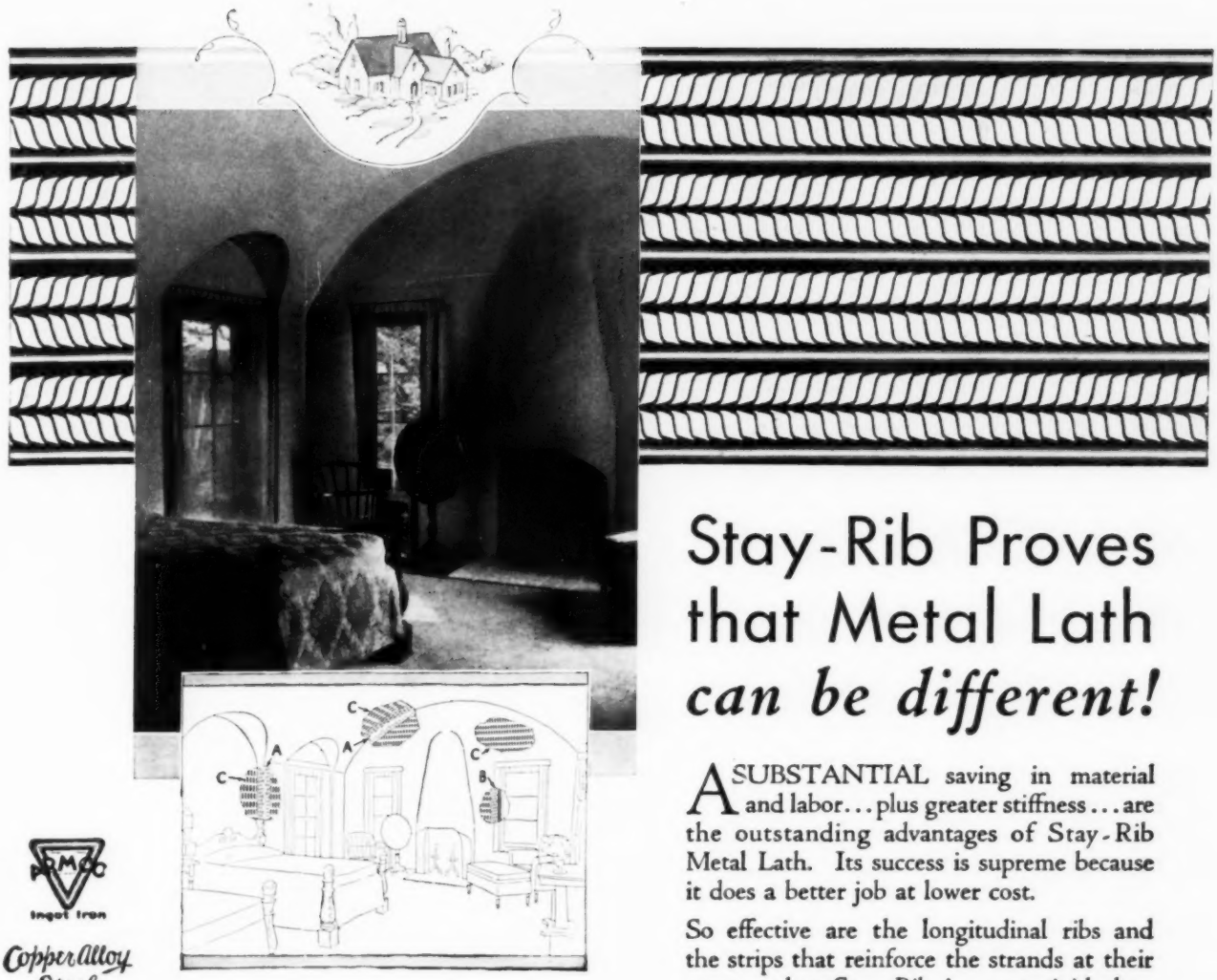

Stay-Rib Proves that Metal Lath *can be different!*

A SUBSTANTIAL saving in material and labor... plus greater stiffness... are the outstanding advantages of Stay-Rib Metal Lath. Its success is supreme because it does a better job at lower cost.

So effective are the longitudinal ribs and the strips that reinforce the strands at their centers, that Stay-Rib is more rigid than other laths of equal weight. Tests have proved this to be true.

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Only *Milcor* can make Stay-Rib Metal Lath. An exclusive process is used to produce the Stay-Rib design and painted Stay-Rib is heat treated and re-annealed after forming ... for longer life and easier handling. Specify Stay-Rib by name. It has no equal.

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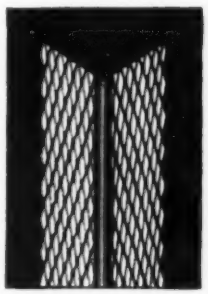

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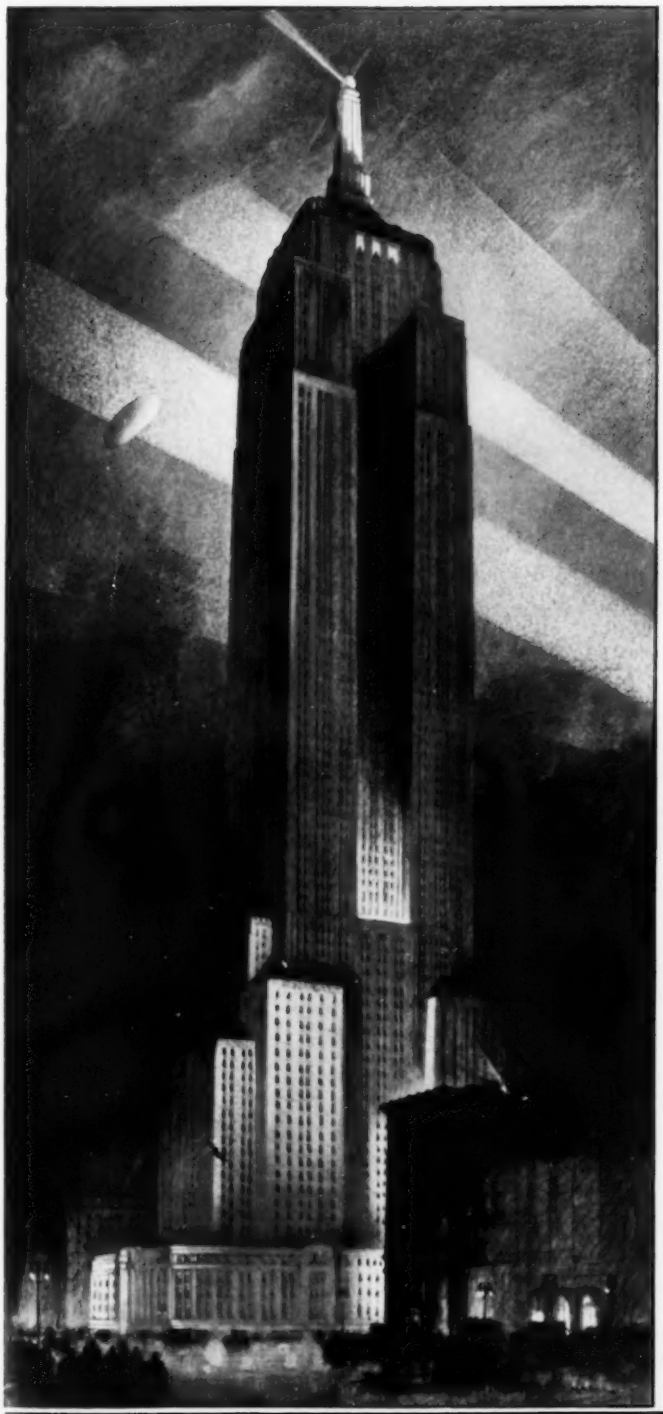

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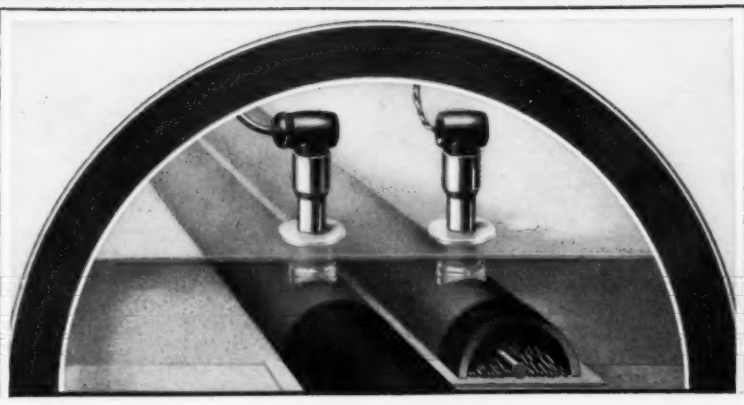

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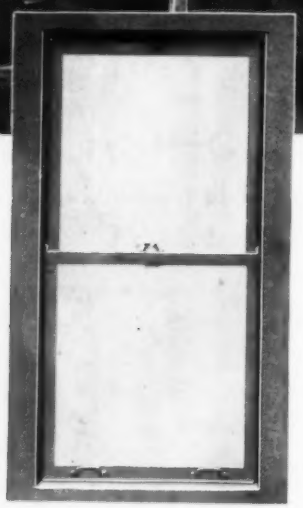

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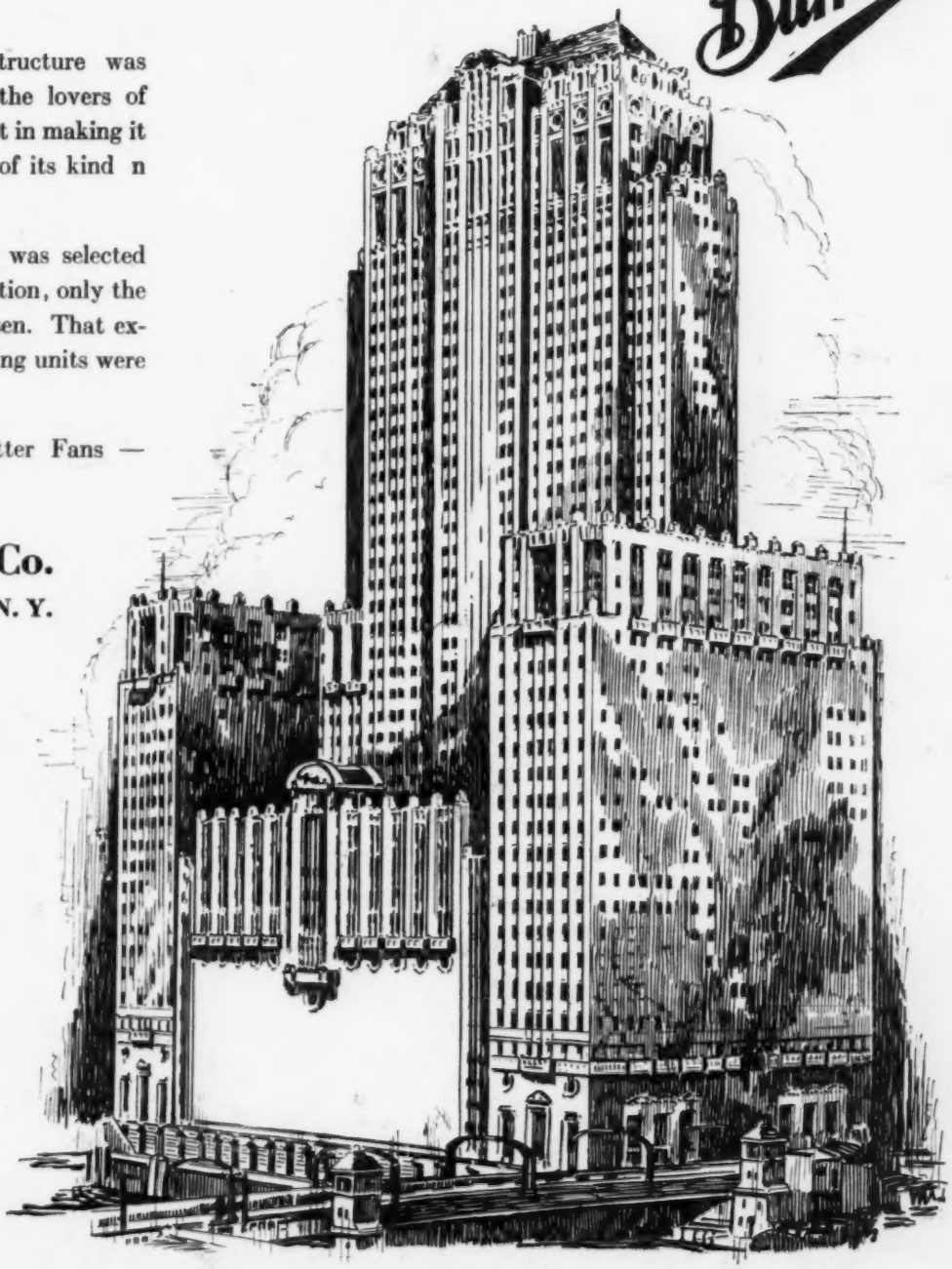

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